Oral Presentation

O-1-1 | ANTICIPATING TRACHEOSTOMY IN THYROID SURGERY.

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Objective: Thyroid surgery is commonly performed in our Endocrine Unit. As a tertiary referral centre in Malaysia, we received complicated cases referred from general surgeon. In view of that, emphasis on the possible risks arising from the surgery will be explained. Therefore, this study is to help us in anticipating which patients are at greater risks of requiring tracheostomy postoperatively.

Patients and Methods: All patients who underwent thyroid surgery from January 2007 till September 2009 in Putrajaya Hospital, Malaysia were prospectively accrued in this study. Preoperative clinical assessment, vocal cord assessment, intraoperative finding especially in relation to preservation of RLN and technical difficulty were analyzed. Tracheostomy was decided on the basis of clinical judgement.

Results: 584 thyroid surgeries were perfomed from January 2007 till september 2009. 11 patients required tracheostomy with the incidence of 1.9% (11/584). All the eleven patients underwent total or debulking thyroidectomy. They have some degree of clinically goitre fixity. 7 patients have vocal cord palsy/paresis preoperatively (63%). 8 cases were diagnosed as differentiated thyroid malignancy, 1 patient confirmed as lymphoma of thyroid and the other two were large MNG with tracheal compression. The tracheostomy was succesfully removed in 3 patients.

Conclusions: The presence of fixation on clinical examination, vocal cord palsy, previous tracheostomy, tracheal compression and thyroid malignancy should alert the surgeon that the possibility of tracheostomy is high.

Keywords: Tracheostomy, thyroidectomy.

O-1-2 | A NOVEL CHEMO-RADIOTHERAPY WITH LOW-DOSE DAILY CISPLATIN, 5-FU AND DOXORUBICIN FOR ANAPLASTIC THYROID CARCINOMA: A PRELIMINARY REPORT

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Background: Although anaplastic thyroid carcinoma (ATC) has a dismal prognosis, some patients show a rather favorable survival by multimodal treatment with the combination of surgery, external irradiation and chemotherapy. However, there has been no established regimen yet. We reviewed the outcomes of patients who underwent a unique chemoradiotherapy (CRT) between 1998 and 2007.
Methods: The regimen consists of external irradiation of 40Gy (2Gy/day) combined with concurrent low -dose cisplatin (CDDP, 5mg/m2, day 1-5, 8-12, 15-19, 22-26), 5-fluorouracil (5-FU, 200mg/m2,day 1-26), and doxorubicin (ADM, 20mg/m2 on day1, 15). It was performed on 21 patients with ATC. There were 13 men and 8 women. The median age was 66 years (range; 54-81).
Results: The treatment was accomplished completely in 19 (90%) patients and was interrupted in 2 (10%) because of progressive distant metastases. After excluding 10 patients who underwent complete resection before CRT, 1 patient (11%) showed partial response (PR), 8 patients (78%) showed stable disease (SD), and 1 patient (11%) had progressive disease (PD) on the basis of RECIST. Overall 6 month survival rate for patients treated with CRT was 57%. With the novel CRT, death from loco-regional reason was seen in 2 patients (11%). Grade3-4 toxicities were observed in 12 patients (63%); however, there was no treatment -related death.
Conclusions: Our new CRT is effective in loco-regional control for patients with ATC, especially when combined with radical surgery. The therapy has acceptable toxicities with maintaining the patient's quality of life; however, it was incompetent in preventing distant metastasis.

O-1-3 PRIMARY HYPERPARATHYROIDISM (PHPT): FACTORS INFLUENCING THE NEED FOR INTRAVENOUS (IV) CALCIUM INFUSION FOLLOWING PARATHYROIDECTOMY

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Background:
The aim of this study is to investigate the factors determining the need of IV calcium infusion following parathyroidectomy in patients who are not having very severe PHPT in a developing country.
Methods:
Prospective study consisted of 41 patients with PHPT, undergoing parathyroidectomy between October 2007 and November 2009. Patients having any two of following factors were started on prophylactic IV calcium infusion (Group A): 1. Skeletal fractures, 2. Serum iPTH values > 1400 pg/ml, 3. BMD scored < -3.5 SD at hip. Remaining patients were divided in Group B1 and B2 based on the need or no need of subsequent IV calcium infusion respectively. Various clinicopathologic and biochemical factors were compared among the groups using Student T test and Chi-square tests.
Results:
Eight (20%) patients were in Group A. Of the remaining 25% (8/33) subsequently require calcium infusion (Group B1). Group B1 patients were significantly younger (mean age: 34.3 vs. 49.4 yrs; p= .04) and had high pre-operative alkaline phosphatase levels (549 vs. 201 U/L p= .006) as compared to Group B2. They also had lower serum calcium (11.7 vs. 12.8 mg%), increased iPTH (571.9 vs. 329.8 pg/ml), and lower vitamin D levels (10.8 vs. 18.3 ng/ml). However none of these or other factors (e.g.: bone pains and hypercalcemic crisis) was significantly different between Group B1 and B2.
Conclusion:
Young age and high pre-operative alkaline phosphatase levels are predictors of the need of post-operative IV calcium infusion among the patients not having very severe PHPT.

O-1-4 PERSPECTIVES OF ROBOT ASSISTED THYROIDECTOMY IN THE MANAGEMENT OF THYROID CARCINOMA FROM THE YUMC EXPERIENCE OF CONSECUTIVE 1000 CASES

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Purpose: With dexterity of robotics, robotic surgical system has been the most innovative roles in various areas for the promotion of minimally invasive techniques. We have already introduced robotic surgical method for thyroid using gasless, transaxillary approach(TAA). In this study, we will report our experience of robotic thyroidectomy and demonstrate its utility in surgical management of thyroid cancer.
Patients and Methods: From Oct. 2007 to Nov. 2009, 1000 patients with thyroid cancer underwent robotic thyroid surgery. All the patients were selected according to inclusion criteria after consideration of their risk stratifications. We analyzed the patient's clinico-pathologic characteristics and short-term follow-up results.
Results : Mean age of the patients was 39.1±9.6 years. 624 patients underwent less-than total and 376 underwent bilateral total thyroidectomies. Mean operation time was 136.7±44.4 min. and mean post operative hospital stay was 3.0±0.45 days. There was no serious surgical complication except 3 cases of RLN injury, and 1 Horner syndrome. Mean tumor size was 0.79±0.6 cm and PTMC was in 771 cases. Mean number of retrieved central L/Ns was 5.04±3.56 and central neck L/N metastasis occurred in 368 cases. In the TNM stage, 847 patients were stage I, 144 were stage III and 9 were stage IVA.
Conclusions: Through our experiences, we can conclude that robotic thyroidectomy using a gasless TAA is a feasible, safe, and promising surgical alternative, currently for early thyroid cancer. The inclusion criteria of this technique could be gradually extended to the advanced thyroid cancer with experience and developments of robotic instruments.

O-1-5 THYROID CONSERVING SURGERY FOR PAPILLARY THYROID CARCINOMA

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BACKGROUND The extent of thyroidectomy for papillary thyroid carcinoma has been open to debate. Although total thyroidectomy followed by I-131 ablation and TSH suppression has been advocated for almost all patients with differentiated thyroid cancer in western countries, there may be subgroups for which thyroid conserving surgery is appropriate.
METHODS In a retrospective study of 508 patients with papillary thyroid carcinoma who underwent initial surgery between 1981 and 1991, preoperative characteristics including T (size and extent of the tumor), N (palpable nodal involvement) and M (distant metastasis) were correlated with clinical outcomes.
RESULTS For 397 patients who underwent thyroid conserving surgery with curative resection, median duration of follow-up was 15.1 years. Probabilities of any recurrences at 15 years were 3% for T1N0, 22% for T2N0, 19% for T3N0, 37% for T0-3N1 and 31% for T4 tumors, respectively. Kaplan-Meier estimates of cancer mortality at 15 years were 1% for T1N0, 1% for T2N0, 6% for T3N0, 6% for T0-3N1, 16% for T4 tumors, respectively.
CONCLUSION Thyroid conserving surgery is the treatment of choice for T1N0M0 solitary papillary thyroid carcinoma while total thyroidectomy followed by I-131 plus TSH suppression should be considered for T0-3N1 or T4 or M1 tumors. Taking risk-associated factors other than TNM into account may particularly be useful to decide the extent of surgery for patients with T2-3N0 papillary thyroid carcinoma.

O-1-6 THE MANAGEMENT OF PHAEOCHROMOCYTOMAS - INDICATIONS FOR OPEN SURGERY IN THE LAPAROSCOPIC ERA

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BACKGROUND: Laparoscopic Adrenalectomy (LA) for phaeochromocytoma has largely replaced Open Adrenalectomy (OA) over the past two decades. There is limited data however comparing both techniques.
METHODS: A retrospective review of all patients operated between 1988 and 2009 was conducted in our centre. Data included demographics, morbidity, mortality, size/site of tumour, length of operation and hospital stay.
RESULTS: 54 patients with phaeochromocytoma (n=48) or paraganglioma (n=6) underwent surgery (28 OA: 26 LA including 2 conversions). Of the 28 OAs, 19 were performed before the laparoscopic program, 3 for tumours > 10 cm, and 6 for paragangliomas. 18 patients presented with classical presentations; 16 with hypertension; 2 with hypertensive crisis; 3 with hypertension during pregnancy; 8 with endocrine syndromes; 5 with incidentalomas and 2 with recurrent paragangliomas. Median length of stay for the LA group was 4 days and for the OA group was 13 days (p=0.001). Median tumour size was 4.8 cms for the LA group and 7 cms for the OA group. Median operative time was 130 minutes in the LA group and 152 minutes for the OA group. All post-operative complications occurred in the OA group (p=0.023). OA took a similar length of time to perform as LA (p=0.088), but was significantly more likely to be performed upon larger tumours (p=0.039)
CONCLUSION: LA was associated with fewer postoperative complications and shorter hospital stay than OA and should therefore be the optimal management of phaeochromocytomas <10 cms. However, OA should be reserved for tumours >10 cm, and for paragangliomas.

O-1-7 CLINICAL SIGNIFICANCE OF PSAMMOMA BODY AROUND PAPILLARY THYROID CARCINOMA

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Background: Psammoma body, a well circumscribed laminated calcification, is found most commonly in papillary thyroid carcinoma (PTC), meningioma, and papillary serous cystadenocarcinoma of the ovary. In PTC, the clinical meaning of histologically determined scattered psammoma body around papillary thyroid carcinoma is unknown. We evaluated clinical significance of scattered psammoma body around PTC.
Patients and Methods: Of 762 patients who underwent thyroid cancer surgery between January and July 2009, 541 patients satisfied inclusion criteria were enrolled. They were divided into two groups. Patients with histologically determined scattered psammoma body around primary tumor were classified as Group I (n=209), and patients without scattered psammoma body as Group II (n=337). Clinicopathological features were retrospectively compared between two groups.
Results: Capsular invasion (p=0.013), infiltrative tumor margin (p=0.022), and cervical node metastasis (p<0.001) were significantly more prevalent in Group I than Group II.
Conclusions: Presence of scattered psammoma body around papillary thyroid carcinoma may suggest more aggressive characteristics in patients with papillary thyroid carcinoma.

O-1-8 PROPHYLACTIC THYROIDECTOMY IN CHILDREN WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 2

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BACKGROUND The most common cause of death in patients with Multiple Endocrine Neoplasia type 2 (MEN2) is medullary thyroid carcinoma. All patients with MEN2 develop this cancer and Prophylactic Thyroidectomy (PT) is recommended to prevent malignant transformation.

METHODS This study reviews our experience of treating children identified as carriers of a RET mutation diagnostic of MEN-2A. Data was collected by reviewing patient notes and hospital electronic databases.

RESULTS Between 1998 and 2009 15 children (8 boys; 7 girls) were identified by genetic analysis as having MEN 2. The commonest codon with RET mutation was 634Y (n=8), 2 siblings were positive for 891A, 2 further siblings were 790F positive and 1 child had codon 620G mutation. Of these, 13 underwent PT and 3 central lymphadenectomy (2 are awaiting surgery). Median patient age of those undergoing surgery was 7.5 yrs (range 3.5 - 15 yrs) and median hospital stay was 4 days. 10 children had transient hypocalcaemia following surgery and required oral calcium (10) and alfacalcidol (3). There were no other post-op complications. Histology showed medullary carcimoma in 4 specimens (completely excised) C-cell hyperplasia in 8 cases, and 1 case showed non-specific thyroiditis only. There were no lymph node metastasis and all children but one have undetectable calcitonin levels.

DISCUSSION This is the first UK case series of children with MEN2 undergoing prophylactic thyroidectomy. We have shown PT to be a rare but safe procedure. We propose to conduct an audit of prophylactic thyroidectomy in children with MEN2

O-1-9 AS A LONG-RANG OBJECTIVE EUTHYROIDISM, OUR STRATEGY IN PATIENTS WITH GRAVES' DISEASE TREATED BY SUBTOTAL THYROIDECTOMY AND POSTOPERATIVE SODIUM IODIDE

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Background The total thyroidectomy for Graves' disease some unfavorable events such as hypocalcaemia and recurrent laryngeal nerve palsy. It makes worsening quality of life of patients. As a long-rang objective euthyroidism, we underwent subtotal thyroidectomy combined with sodium iodide (iodine-131) in postoperative hyperthyroidism relapse. The aim of this study was to evaluate the effectiveness and outcomes in those combined therapy.

Methods From 1966 to 2008, a total of 2587 patients with Graves' diseases underwent subtotal thyroidectomy in Kanaji thyroid hospital. Among these patients, we analyzed 146 patients who were able to observe post operation from 2004 to 2008.

Results Overall, the mean operating time, mean blood loss, mean resected thyroid weight, and mean remnant thyroid weight were 107 minutes, 90.2 ml, 68.6 g, and 5.4 g, respectively. As the resected thyroid weight increased, the operating time was significantly prolonged and the blood loss significantly increased. Complications included three temporary cases of recurrent laryngeal nerve palsy with hypocalcaemia, and three cases of secondary hemorrhage. Thyroid function was classified as euthyroid, hypothyroidism, and relapse hyperthyroidism in 99, 20, and 27 patients, respectively. The mean relapse term was 24.1 month after surgery. At 45 months of median follow-up, 27 relapse hyperthyroidism patients were treated with sodium iodide, medication (MMI or PTU), and potassium iodide in 14, 6, and 7 patients, respectively. Finally 113 patients were euthyroidism without medication.

Conclusion As a long-rang objective euthyroidism, the subtotal thyroidectomy combined with sodium iodide in postoperative hyperthyroidism relapse is effectiveness and beneficial treatment with Graves' disease.

O-1-10 EFFECT OF NERVE STIMULATOR IN PROTECTION OF RECURRENT LARYNGEAL NERVE DURING RE-EXPLORATION OF THYROID

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Purpose

To identify and protect of recurrent laryngeal nerve and vagus nerve is an important issue in operation for thyroid disease. Previous operation and exploration of thyroid or parathyroid would induce scar formation and increase the possibility of nerve injury. Nerve stimulator with endotracheal tube probe for identify recurrent laryngeal nerve had been developed in last century. But the device is still expensive and indication for use of the device is still controversial.

Materials & Methods

Between June 2007 and Dec. 2009, we arranged thyroid operation with nerve stimulator usage for 45 patients who had ever received thyroid surgery before. All the data are collected retrospectively. Basic information of the patient, indication and method of previous and current thyroid surgery, hoarseness before and after the operation, intra-operative data includes blood loss and identification of recurrent laryngeal nerve or vagus nerve. Postoperative bronchoscope is suggested to identify vocal cord palsy.

Results

36 of the 45 patients had received the operation at ipsilateral side of exploration before, 4 had contra-lateral exploration. 5 patients can't recognize the actual side of operation before. 35 patients were diagnosed as thyroid malignancy and others were benign disease. Only one patient had hoarseness before the operation with bronchoscope revealed left vocal cord palsy. The recurrent nerves were identified in all case except one, which was failed to reach due to device dysfunction. All but two recurrent laryngeal nerves were well preserved during the operation. One nerve was intended to sacrifice due to tumor invasion, and then anastomsed with nerve graft--ansa cervicalis. Another patient received total laryngectomy due to trachea invasion.

Conclusions

The nerve stimulators do have a lot of help to identify recurrent laryngeal nerve in the re-explorative thyroid surgery.

O-2-1 A COMPARATIVE STUDY OF ROBOT-ASSISTED VERSUS CONVENTIONAL ENDOSCOPIC THYROIDECTOMY IN PTMC PATIENTS

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Robot assisted techniques now widely applied at various surgeries to overcome limitations of conventional endoscopic surgeries. The aim of this study is to compare the early surgical outcomes of the two groups who underwent robotic (RG) versus conventional endoscopic thyroidectomy (EG) for papillary thyroid microcarcinoma(PTMC) patients.

From Nov. 2001 through Jul. 2009, 1175 patients with PTMC underwent endoscopic thyroidectomy using a gasless, trans-axillary approach, of these, 578 were RG and 598 were EG.The patient's clinicopathologic characteristics, early surgical outcomes were compared retrospectively.

Mean age is older and M:F ratio is larger in RG. RG showed larger tumor size, more frequent central node metastasis, capular invasion and bilaterality. Tumor and nodal status of RG were more advanced than EG. Total thyroidectomy were more frequent in RG and the extent of central node dissection were wider than EG. Rregardless of robotic docking time, the real operation time of less than total thyroidectomy was significantly shorter in RG and in total thyroidectomy, there were no significant differences but it showed shorter tendency in RG. Transient hypocalcemia was significantly frequent in RG, but there were no permanent hypocalcemia. Postoperative serum TG level showed no statistical differences. There were no recurrence case during the short term sonographic follow-up or no abnormal uptakes at RAI therapy in both groups.

Robotic thyroidectomy can provide shorter operation time and wider surgical extent without increasing significant postoperative complication. So we can anticipate robotic surgery could expand the indication of endoscopic thyroidectomy for the treatment of more advanced thyroid cancer.

O-2-2 DOSE ROBOTIC ASSISTANCE SIGNIFICANTLY REDUCES POSTOPERATIVE DISTRESS AND PATIENT COMPLAINTS WITH COSMESIS IN PERFORMING THYROID SURGERY? : A PRELIMINARY REPORT.

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Objectives: Since the first description of the robotic thyroidecomy using gasless transaxillary approach in 2008, the role of robotic thyroidectomy is currently in evolution. The aim of this study is to compare our technique of robotic thyroidectomy with conventional open surgery from the aspects of the postoperative distress and patient's satisfaction.
Materials and Methods: A total of 84 patients were enrolled in this prospective study protocol: 41 were treated with robotic thyroidectomy, and 43 were treated with conventional open thyroidectomy. The two groups were similar for age, gender, and the mean tumor diameter of the thyroid tumor. The postoperative pain and the subjective voice and swallowing changes were recorded prospectively based on a symptom scale. The satisfaction with cosmetic outcome was measured by both verbal response and numeric scales at 3 months.
Results: Although the mean operating time for the robotic technique was significantly longer than for open surgery ($p=0.015$), there was no difference between two groups regard to postoperative pain. Mean swallowing disturbance was significantly decreased 3 months after robotic surgery but not after open surgery ($p=0.007$). However, there was no significant difference in objective and subjective voice parameters between two groups. At 3 months, patients undergoing robotic surgery reported a greater mean cosmetic satisfaction score ($p<0.001$).
Conclusion: Although the postoperative pain and complications are comparable between the two groups, conventional open thyroidectomy involves less operative time. However, robotic technique offers distinct advantages in terms of very good to excellent cosmetic results and reduced postoperative swallowing symptom.

O-2-3 | MINIMALLY INVASIVE SURGERY FOR THYROID TUMOR

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In 1998, we started total-video endoscopic neck surgery for treatment of benign tumors in the neck. Most difficult problem of endoscopic surgery for the neck region is pneumomediastinum that is brought by insufflation using to make working space. Our new technique -neck region lifting method (NRLM)- basically enabled to performe endoscopic neck surgery without insufflation. Concequently, the potential risk of insufflation-related complication was disappeared. Some of the associated difficulties have been addressed by recent technical improvements.
Video-assisted endoscopic neck surgery is a method using conventional technique and instruments. Mini-incision at lateral side of the neck was made near the tumor. We used endoscpy when we are not able to see operative field clearly.
Indications in malignant thyroid tumors have not been definitively established. Usually a thyroid mass less than 1 cm in diameter is not treated with an open procedure, while masses only slightly larger than 1 cm and have no apparent metastasis nevertheless are managed with open surgery, as is the case for large tumors. In such borderline situations, patients' anxiety about malignant disease is compounded by anxiety concerning cosmetic results. For these small thyroid cancers and lesions suspected of malignancy, we now use endoscopic neck surgery.
We have experienced over hundred cases using total-video and video-assisted endoscopic neck surgery for neck mases. Here, we will present minimally invasive surgical procedure for benign and malignant thyroid tumor.

O-2-4 | withdrawn

O-2-5 GASLESS ENDOSCOPIC THYROID SURGERY THROUGH ANTERIOR CHEST APPROACH

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Object To get more cosmetic effects and no small incision left in anterior neck zone, we developed gasless endoscopic thyroid surgery through anterior chest approach. Methods From June 2004 to May 2009, 500 cases of thyroid gland diseases underwent this novel technique. Results Among the 500 cases, the operating time was 105.96±35.07 min and the blood loss was 18.46±12.47 ml, respectively. There was no conversion to open surgery. Only 6 cases showed temporary paralysis of recurrent laryngeal nerve and recovered within 2~4 months after the surgery. 2 cases showed permanent paralysis of recurrent laryngeal nerve. 2 cases got postoperative hematoma, and there were no injury of superior laryngeal nerve and hypoparathyroidism. No complication such as bleeding, irritating cough, tetany and emphysema happened after the operation. All patients had no surgical scar left on neck and were satisfied with the cosmetic effects. Conclusion Gasless endoscopic thyroid surgery through anterior chest approach is a feasible and safe method. This technique had better cosmetic results and would be an alternative surgical method for patients with thyroid nodule.

O-2-6 COMPLETENESS OF THE BILATERAL AXILLO-BREAST APPROACH ENDOSCOPIC THYROIDECTOMY COMPARED TO OPEN THYROIDECTOMY BY MEANS OF THE POSTOPERATIVE RADIOACTIVE IODINE UPTAKE

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Background: The Bilateral Axillo-Breast Approach (BABA) endoscopic thyroidectomy (ET) has excellent cosmetic result as well as comparable complication rates and postoperative thyroglobulin (Tg) level. To assure the surgical completeness of BABA ET, we compared ET and open thyroidectomy (OT) by means of the radioactive iodine (RAI) uptake of remnant thyroid. Patients and Methods: From January, 2003 to June, 2007, 46 patients who had received RAI ablation after total thyroidectomy were enrolled. Twenty-five patients underwent ET and 21 OT. The two groups did not differ significantly in terms of clinicopathological factors other than sex and age. The remnant thyroid was measured by the neck-to-skull RAI uptake ratio on the first postoperative I-131 ablation scan. Postoperative stimulated Tg levels were compared between ET and OT groups, as were the total number of RAI ablation sessions and the total RAI doses needed to achieve complete ablation.Results: There were no differences between the two groups in regards of the RAI uptake ratios, TSH level at first ablation, the stimulated Tg levels, the total number of RAI ablation sessions, or the total RAI doses needed to achieve complete ablation. Conclusions: The completeness of surgical removal of thyroid tissue by BABA ET could be comparable with that of OT. The BABA ET might give a safe option for patients with low risk thyroid cancer who are concerned with the scars in the neck area.

O-2-7 INITIAL EXPERIENCE OF VIDEO-ASSISTED THYROIDECTOMY (VANS) IN ALEXANDRIA

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Background
The technique of video assisted thyroidectomy through infraclavicular skin incision was developed by K.Shimizu in 1998, after that several studies demonstrated the feasibility of video assisted thyroid surgery as an effective treatment for thyroid diseases with better cosmetic results compared with these results of conventional thyroid surgery.
After training in Nippon Medical School for 15 months on doing VANS on 47 patients with thyroid diseases, we introduced VANS in Alexandria medical school since 2008 and during this period of time we gain better experience in doing this type of surgery.
Methods
In this paper we are going to give a summary about the VANS surgeries done in Alexandria medical School regarding operative technique, intraoperative bleeding, operative time, complication and cosmetic results.
Conclusion
The results of our initial VANS experience are promising. However, more improvement with expansion of our indications may be gained with increasing number of VANS cases

O-2-8 ROBOTIC THYROID SURGERY BY BILATERAL AXILLO-BREAST APPROACH USING DA VINCI SURGICAL SYSTEM

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Background: The neck area, especially the thyroid gland poses a difficult challenge for many endoscopic surgeons. Robotic surgery is useful in this area due to its excellent magnification and endo-wrist function. We present our experience with robotic endoscopic thyroidectomy using the bilateral axillary breast approach. Patients and Methods: From February, 2008 to August 2009, we applied da Vinci surgical system to BABA endoscopic neck surgery for 275 patients. The male to female ratio was 1:7.33. Mean age of the patients were 38.1 ± 8.9 (13~66) years. After subcutaneous infiltration with diluted epinephrine solution, subplatysmal and subcutaneous space was dissected. Two circumareolar ports and 2 axillary ports were used and operative space was obtained with low pressure CO2 gas insufflation. Total thyroidectomies and central node dissection were done in a manner similar to BABA endoscopic thyroid surgery. Results: The mean operation time was 210.0±45.5 min. The intraoperative loss of blood was minimal. The mean hospital stay was 3.5± 0.7 day. The pathologic diagnosis included 187 papillary carcinoma, 1 follicular adenoma, 1 Hashimoto's thyroiditis, 1 focal fibrosis, and 4 adenomatous goiter. There were 56 (28.0%) cases of transient and 3 cases (1.5%) of permanent hypoparathyroidism. There were 15 cases (7.5%) of transient and 1 case (0.5%) of permanent recurrent laryngeal nerve palsy. Cosmetic results were excellent and patients were all satisfied. Conclusion: The Robot BABA endoscopic thyroid surgery would be a feasible method for thyroidectomy with minimal adverse effect, and excellent cosmetic result.

O-3-1 DEFINING THE LEARNING CURVE FOR ROBOTIC THYROIDECTOMY: A MULTI-CENTER STUDY COMPARING EXPERIENCED AND BEGINNER SURGEONS

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Objectives: Robotic thyroidectomy using gasless transaxillary approach was an advanced surgical procedure in endoscopic surgery. However, this new surgical technique remains in the early stage of the learning curve, lacking sufficient clinical experience and profound research. The aim of this study was to determine whether newly appointed surgeons are able to achieve surgical outcomes comparable to more experienced peer.
Materials and Methods: We conducted a prospective, controlled, multi-centre study by 4 endocrine surgeons at 3 academic centers. To establish the number of procedures required before achieving a stable robot technique, patients were divided into 10 series chronologically. Perioperative data were categorized according to whether surgery was carried out by an established surgeon (ES) or a newly appointed surgeon (NS). Outcome measures were demographic data, operative time, blood loss, hospital stay, pathologic result, and postoperative complication.
Results: Six hundred and forty-four robotic thyroidectomy procedures were carried out in the period September 2008 to October 2009. Of these, 267 (41.5%) robotic surgery were performed in ES and 377 (58.5%) in NS. No difference of perioperative outcome was found between both groups, except for operating time which was significantly longer in the NS ($p<0.001$). However, this increase in operating time disappeared after 50 robotic surgeries in the NS.
Conclusion: Our experience demonstrated that the first 50 cases constitute the early stage of the learning curve for robotic thyroidectomy using gasless transaxillary approach. Further research is needed to determine the surgeon's experience that is associated with improved oncologic control and long-term clinical outcome.

O-3-2 SCARLESS IN THE NECK ENDOSCOPIC THYROIDECTOMY (SET) AN NUH EXPERIENCE

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Aim
This study reviews our experience with thyroid surgery the SET technique.
Methods
The study group comprised of all patients undergoing SET during the period of 2005 and 2009. Data was prospectively gathered, including patient demographics, indication for surgery, approach, nodule size, final pathology and complications.
Results
We performed 50 cases over a 5 year period comprising of 13 cases via the axillary approach and 9 cases via the anterior/breast approach and 28 cases via both the axillary and breast approach (hybrid). 3 of the axillary approaches were with single port access. All were lobectomies and one case was an isthmusectomy. The mean age of the patients was 41.2 years, the mean gland and nodule size was 5.1 cm and 3.6 cm respectively and mean length of stay was 2.1 days . The mean operative time was 155.5 minutes.
There were 3 conversions.
We encountered three post-operative complications. First was transient hoarseness, Another patient had a delayed presentation of a suspected tracheal perforation secondary to a thermal injury; which resolved with conservative treatment, The third patient had a transient brachial neuropraxia All patients with successful SET were satisfied with the aesthetic outcome of the procedure.
Conclusion
The procedure is a safe surgical technique to remove thyroid nodules. It does not leave the patient a scar in the neck.

O-3-3 TRANS-ORAL VIDEO-ASSISTED NECK SURGERY FOR THYROID TUMOR: THE FIRST REPORT OF THE NEW TECHNIQUE OF ENTIRELY SKIN-SCARLESS ENDOSCOPIC THYROIDECTOMY.

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Endoscopic thyroidectomy is a well established surgical technique mainly for benign thyroid nodules. Various surgical techniques, e.g., direct cervical approach (anterior or lateral), extracervical access (chest wall, breast or axillary), have been developed in this decade. Shimizu et al. developed a video-assisted neck surgery (VANS) with gasless anterior neck skin lifting method approaching from the chest wall for endoscopic thyroidectomy and reported in 1998.
While, natural orifice translumenal endoscopic surgery (NOTES) have been developed as a new surgical technique in abdominal surgery. NOTES is an surgical technique whereby "scarless" abdominal operations can be performed with an endoscope passed through a natural orifice (mouth, urethra, anus, etc.) then through an internal incision in the stomach, vagina, bladder or colon, thus avoiding any external incisions or scars. If we can do thyroidectomy with entirely scarless around the body surface, that have immensely cosmetic advantage.
Recently, we developed a new trans-oral technique of entirely skin-scarless endoscopic thyroidectomy that incorporated a concept of NOTES in VANS-technique with gasless anterior neck skin lifting by mechanical retraction, and performed a left lobectomy of the thyroid gland for patient of follicular tumor. Witzel et al. and Benhidjeb et al. reported Transoral access for endoscopic thyroid resection in a porcine model or human cadavers, lately. But, there is no report of trans-oral approach of video-assisted thyroid surgery for human being yet. This is the first report of trans-oral video-assisted neck surgery for human thyroid tumor.

O-3-4 VIDEO-ASSISTED SUBMANDIBULAR SIALADENECTOMY

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This work aimed at assessing the feasibility and safety of video-assisted submandibular sialadenectomy using 2step technique. The study included 14 adult cases(12 calcular, 2 benign neoplasms)10M,4 F,mean age 38.7 y.Two-steps technique was used (superficial lobe exised first,then the deep lobe)via a 1.5 cm incision.Instruments included a 5mm 0 angle endoscope,a video camera system,a spatula-aspirator,fine navy retractor,and harmonic scalpel. Average time was 89.7 min.Operative blood loss mean was 45.9ml. The best cosmetic results were obtained 12weeks postoperatively with a mean score of 9.8(of a 10 scale).There were no marginal nerve injury in any case. Coclusion:Minimaly invasive video-assisted submandibular sialadenectomy is a safe ,with minimal scarand security for cervical branch of facial nerve.

O-4-1 | LAPAROSCOPIC ADRENALECTOMY: ANALYSIS OF 139 CASES

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Introduction: The purpose of this study was to evaluate the results of laparoscopic adrenalectomies carried out in our hospitals.
Materials of Methods: A total of 139 laparoscopic adrenalectomies were performed between 2001 and 2008 at Kobe University Hospital or related hospitals. The clinical characteristics and outcomes were reviewed in a retrospective study.
Results: Indications for laparoscopic adrenalectomy in our patients were as follows: Cushing syndrome in 23, preclinical Cushing syndrome in 11, primary aldosteronism in 42, pheochromocytoma in 31, nonfunctioning tumor in 30, adenocarcinoma in 2. The mean operative time was 180.6 minutes. The mean intraoperative blood loss was 53.8 ml. Both operative time and intraoperative blood loss correlated with tumor size.
Conclusion: Laparoscopic adrenalectomy is a safe procedure in various adrenal tumors. Tumor size correlated with operative time and intraoperative blood loss.

O-4-2 | LAPAROSCOPIC ADRENALECTOMY FOR PHEOCHROMOCYTOMA, IS IT SAFER THAN OPEN?

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Background: Laparoscopic adrenalectomy is now accepted as the procedure of choice for benign adrenocortical tumors, however, some debates still exist about the safety of laparoscopic resection of Pheochromocytoma compared to open.

Objective: In this study we are investigating the safety and efficacy of laparoscopic resection of Pheochromocytoma compared to open.

Methods: A retrospective review of 28 adrenalectomies done for 27 patients with confirmed evidence of adrenal or extra-adrenal pheochromocytoma from 1999 to 2009 was conducted. The following parameters were investigated: age, sex, BMI, side, operation type, Intraoperative systolic blood pressure (SBP), operative time, tumor size, hospital stay, postoperative morbidity and mortality.

Results: 11 patient (M: F=4: 7, mean age = 54.18) underwent laparoscopic transperitoneal adrenalectomy (LA), while 16 patients (M: F = 7: 9, mean age = 51.1) underwent open conventional adrenalectomy (OA). BMI in LA: OA was 21.9: 21.7 (p=0.87). LA had a significantly shorter hospital stay (p=0.013) and a significantly less Intraoperative blood loss (p=0.03). Operative time was slighly longer in LA but not significant (p=0.66). Intraoperative hypertension surges, persistent hypertension and hypertensive crisis occurred in much less frequency in LA patients .However it was not significant (p=0.18) due to the small population number.

Conclusion: LA proved to be the operation of choice of benign adrenal and extra-adrenal pheochromocytoma.

O-4-3 THE INTRA- AND POSTOPERATIVE OUTCOME OF LAPAROSCOPIC ADRENALECTOMY FOR PHEOCHROMOCYTOMA IN AKITA UNIVERSITY

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Introduction: Laparoscopic surgery has become a standard treatment (established procedure) for adrenal tumors. Open surgery is often selected for pheochromocytoma due to its hypervascularity and larger tumor size which lead to bleeding, longer operative time, and difficult-to-control hypertension during manipulation of the tumor. In this study, we assessed the safety of laparoscopic adrenalectomy for pheochromocytoma by comparing the intra- and postoperative data of laparoscopic adrenalectomy with those of open adrenalectomy.
Patients and methods: Operation time, estimated blood loss, and intraoperative blood pressure were evaluated in 28 patients who underwent either open or laparoscopic adrenalectomy in our hospital. Clinical factors which affected perioperative change of blood pressure were also analyzed in laparoscopic adrenalectomy.
Results: The mean estimated bleeding volume in laparoscopic adrenalectomy was significantly less than that in open adrenalectomy, while the mean tumor size and operation time were almost equivalent between the procedures. In laparoscopic adrenalectomy, intraoperative maximal systolic blood pressure was associated with tumor size. Especially, patients with tumor of 4 cm or larger had a tendency to develop more severe intraoperative hypertension. No patients had intraoperative uncontrollable hypertension or open conversion.
Conclusion: Laparoscopic adrenalectomy is safe procedure for pheochromocytoma as well as for cortical adenoma or hyperplasia with less blood loss and less change in intraoperative blood pressure than open adrenalectomy. However, careful manipulation should be needed for larger tumor to prevent acute elevation of intraoperative blood pressure.

O-4-4 INSTITUTIONAL EXPERIENCE OF SURGICAL TREATMENT OF HEREDITARY PHEOCHROMOCYTOMA OF ADRENAL GLANDS

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Background: Despite genetic description (mutations in RET, VHL, SDHB, SDHD, and NF1) of hereditary adrenal pheochromocytoma (HAP) its diagnosis is often delayed, particularly when genetic testing is unavailable. Surgical treatment of HAP remains controversial because of the risk of recurrence and difficulties in corticosteroid replacement therapy after bilateral adrenalectomy.
Patients and methods: From 1996 to 2009 years 89 patients with pheochromocytomas were operated. HAP were detected in 16(18%) using pedigree and syndrome analysis. Operative strategy and outcomes were evaluated.
Results: Mean age of HAP patients was 28±12 years (9-49). 8 patients represented MEN 2A syndrome, 1 - MEN 2B, 1 - neurofibromatosis type 1, 2 - von Hippel-Lindau disease and 4 others - probably pheochromocytoma resulted from germline mutation of genes encoding succinate dehydrogenase subunits (B or D). 6 (38%) patients had unilateral HAP (within follow-up period), 10 - bilateral adrenal involvement with 4 (40%) cases of synchronous disease and 6(60%) asynchronous. All patients with unilateral HAP were operated by total adrenalecomy. 5 from 10 with bilateral HAP were underwent unilateral cortical-sparing adrenalectomy (preferebly left-side) with contrlateral total adrenalectomy (in 4 - during one-stage laparoscopic operation). One subclinical recurrence was detected in remnant in this group. Two from 5 patients after bilateral total adrenalectomy developed acute adrenal insufficiency despite replacement therapy. No one of 5 patients after cortical-sparing operation demonstrated Addisonian crisis, 2 of them were corticosteroid independent.
Conclusions: Laparoscopic approach is ideal for surgical treatment of HAP, particularly in bilateral tumors. Cortical-sparing total-subtotal adrenalectomy can prevent life-threatening adrenal insufficiency.

O-4-5 | withdrawn

O-4-6 | CONN'S SYNDROME: RARE DISEASE WITH VARIOUS PRESENTATIONS

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INTRODUCTION:
Aldosterone-producing adrenal adenoma or Conn syndrome was first defined and reported by Jerome W. Conn in 1955. It was reported in about 16% prevalence among adrenal growth compares to other as Cushing syndrome, pheochromocytoma, incidentaloma and malignant tumours. Nonetheless, the patients may present with various presentations that make detection very difficult. However there are emerging diagnostic tools and various surgical approaches in dealing with this uncommon disease nowadays.
AIM:
To detect the prevalence of Conn's Syndrome cases in a newly set up Endocrine Surgical Unit as well as to assess the mode of presentations of the disease.
METHOD:
Prospective randomized study in a 2-year set up Endocrine Surgical Unit, Hospital Raja Perempuan Zainab II, Malaysia from July 2007 until July 2009.
RESULTS:
There were 7 patients were diagnosed to have adrenal tumours; 5 were Conn's Syndrome (71.4%), 1 (14.3%) was Cushing's Syndrome and 1 (14.3%) was adrenal cortical carcinoma. All the Conn's Syndrome patients were female and presented with various different presentations of primary hyperaldosteronism such as severe headache, generalized weakness or paralysis, easily fatigue, insidious hypokalemia, newly diagnosed hypertension as well as incidental findings. All the Conn's Syndrome patients successfully had trans-abdominal laparoscopic adrenalectomy for removal and histopathologically confirmed the diagnosis.
CONCLUSION:
Conn's Syndrome is a unique and rare disease that may present with various presentations. High index of suspicious in determining the diagnosis should be emphasized so that nobody would miss the diagnosis.

O-4-7 SIX CASES OF ADRENOCORTICAL CARCINOMA AT A SINGLE INSTITUTION IN JAPAN

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Objective: Adrenocortical carcinoma is a rare malignancy with poor prognosis. Because of rarity of the tumor and the location of the adrenal glands, diagnoses are often delayed especially with nonfunctional tumors. We report a 6-case experience of adrenal cortical carcinoma in 12 years.
Patients and methods: We reviewed the clinical and pathological records and updated the follow-up of six patients with adrenal cortical carcinoma treated and observed in our institution between 1995 and 2006.
Results: Six patients (four females, two males) underwent surgery for adrenal cortical carcinoma at our institution. Mean age at diagnosis was 53.3 years (range, 36 to 72 years). The median follow-up was 50.7 months (range, 13 to 132 months). Three patients were clinically classified as stage II, two as stage III, and one as stage IV with bone metastasis. Five patients underwent surgical treatment considered to be a complete resection. One patient underwent operation as a palliative treatment. 5-year overall survival was 62.5%. Recurrences or metastases occurred in four patients (one in stage II, two in stage III, and one in stage IV). Two patients without reoperation for metastases died, but others with radical treatments such as reoperation, mitotane with cytotoxic chemotherapy, transcatheter arterial embolization, and/or radiation are still alive.
Conclusion: The surgery is the treatment of choice for recurrent or metastatic disease whenever complete resection is possible. In our experience, transcatheter arterial embolization was effective against the liver metastasis.

O-4-8 SURGICAL MANAGEMENT OF METASTATIC ADRENAL TUMORS: DECISION MAKING FACTORS IN OUR EXPERIENCE

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Purpose: To clarify the favorable and unfavorable imaging findings for laparoscopic adrenalectomy (LA) against metastatic adrenal tumors.
Materials and Methods: Imaging, intraoperative and pathological findings of 9 patients (11 adrenal glands) with metastatic adrenal tumors were analyzed in terms of operability for LA.
Results: We selected open adrenalectomy (OA) for 2 adrenal tumors with irregular contour and/or cystic configuration on imaging studies. All of 9 adrenal tumors selected for LA were removed safely by LA without any adhesion to the surrounding tissue. Both tumors removed by OA had strong adhesion to the surrounding tissue as expected by imaging studies. Tumor diameters ranged between 21 and 79 mm (average: 38) for LA, and 55 and 67 mm for OA. The operative time and blood loss ranged between 92 and 280 min. (average: 137) and between 3 and 31 g (average: 43) for LA, respectively, but 190 and 257 min. and 333 and 347 g for OA, respectively. Pathological findings showed fibrosis and infiltration of inflammatory cells in the fatty tissue around the tumors removed by OA.
Conclusions: LA for metastatic adrenal tumors is feasible and less invasive than OA. Unfavorable imaging findings for selection of LA against metastatic adrenal tumors are irregular contour, cystic configuration and relatively large mass.

O-4-9 | VARIOUS APPROACHES TO LAPAROSCOPIC ADRENALECTOMY

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Introduction (Purpose):
Comparison of four laparoscopic approaches to Adrenalectomy with video of the less used anterior approach.

Materials and methods:
All the following laparoscopic approaches to Adrenalectomy were compared:
1. Transperitoneal approach - supine position. Trans-mesocolic approach is an alternative on left side
2. Transperitoneal approach - lateral position
3. Retroperitoneal approach - lateral position
4. Posterior (retroperitoneal) approach - prone position
The advantages, disadvantages & technique of each of these were studied.
Other approaches (e.g. Hand assisted Laparoscopic Adrenalectomy, SILS, NOTES, etc) were also studied.

Summary:
The advantages, disadvantages & technique of each of these are discussed. Important points & pitfalls are highlighted in this presentation which includes video of the less popular anterior approach. Each approach has its advantages and indications.

Conclusion:
Transperitoneal approach (supine position) is best for extra adrenal/ multiple pheochromocytomas and those with dual pathology or an unstable spine. The Posterior (retroperitoneal) approach is the approach of choice for adrenal masses with a significant retro-caval component and those with extensive adhesions.

O-5-1 | FINE NEEDLE ASPIRATION CYTOLOGY OF THYROID NODULES: EXPERIENCE FROM ONE INSTITUTION

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Introduction
Palpable thyroid nodules are present in 4 to 7% of the adult population. Fine needle aspiration cytology (FNAC) has now supplanted most other tests for evaluation of thyroid nodules. The objectives of this study are to determine if this accuracy differed between malignant and non-malignant thyroid lesions and to identify possible limitations with FNAC.
Methods
This is a retrospective study of all patients who had FNAC evaluation and subsequent thyroid surgery for thyroid nodules in University Malaya Medical Centre from 1997 - 2007.
Results
345 patients were recruited into the study. The mean age was 43.7 year old and 84.3% of patients were females. The percentage of Malay, Chinese and Indian patients were 38.3%, 27.7% and 28.7% respectively. The overall sensitivity of FNAC for the detection of thyroid malignancy was 59.6% and the specificity 91.0%. For papillary thyroid carcinoma (PTC), the sensitivity was 66.6% and the specificity 100%. The sensitivity for follicular thyroid carcinoma (FTC) was 69.2% and the specificity, 89.2%. The sensitivity and specificity of FNAC in Malays were 56% and 87.1%, Chinese 73.2% and 84.2% and Indians 61.4% and 94.0%. 8.4% of multinodular goitres (MNG) evaluated were malignant.
Conclusion
The majority of patients with thyroid nodules were females. FNAC was less sensitive for PTC than FTC. There were some differences in the FNAC results between the different ethnic groups. FNAC is recommended for all thyroid goitres including MNG as a significant proportion of MNG's evaluated turned out to be malignant.

O-5-2 | PRIMARY SQUAMOUS CELL CARCINOMA OF THE THYROID GLAND

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Introduction: Primary squamous cell carcinoma of the thyroid gland is an extremely rare tumour accounting for less than 1% of the neoplasms of the thyroid. The histogenesis of the tumour in the thyroid gland, which does not contain squamous epithelium, is debatable. These tumours are universally recognized as very aggressive with a poor prognosis.

Patients: In a study of 1760 cases from tertiary care centre which caters to a population from the sub-Himalayan plains of north India, there were 309 cases of thyroid carcinoma (17.6% of the surgically treated thyroid disorders). There were 11 cases of squamous cell carcinoma; two cases were associated with papillary cancer and one case had associated follicular and medullary carcinoma.

Observations: The majority of the cases were in the fifth and sixth decades of life with a M:F::1:3. The duration was mostly short, with most showing rapid growth with 7/11 cases showing local infiltration and 6/11 having metastases to the cervical lymph nodes. Radical surgery was possible in only one patient. None of the cases responded well to radiotherapy or chemotherapy and within a short span of presentation succumbed to the disease mainly because of respiratory embarrassment from tracheal compression.

Conclusion: Squamous cell carcinoma of the thyroid gland is well documented although it is difficult to state whether they occur de novo or as a result of transformation of a pre-existing differentiated thyroid cancer. Once diagnosed these tumours follow an aggressive course with poor outlook. Death occurs from locoregional infiltration of the tumour.

O-5-3 | VIDEO PRESENTATION OF TOTAL THYROIDECTOMY, DISSECTION OF CENTRAL NECK COMPARTMENT AND BILATERAL MODIFIED RADICAL NECK DISSECTION WITH HARMONIC FOCUS

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Case report: Fourteen years old male,treated with L-thyroxine as Hashimoto thyreoiditis for 1.5 years. On clinical examination we found tumor in the left thyroid lobe 2.5 cm and multiple tumors in the right lobe, with gross lymphadenopathy in central and both lateral neck compartments. Serum thyroglobulin level was 154 ng/ml.
Methods: Total thyroidectomy, dissection of central neck compartment and bilateral modified radical neck dissection with ultrasound scalpel (Harmonic focus). The operation was performed via standard collar incision and additional modified McFee incisions on both sides.
Results: Papillary carcinoma, 21mm with multiple microscopic foci in both thyroid lobes. Lymph node metastases in 44 out of 82 dissected in all neck compartments. Operative time was less than 3 hours.Postoperative radioiodine ablation with 5.55GBq and L-thyroxine suppression. On regular examination there were no complications regarding recurrent laryngeal nerve palsy or hypoparathyreoidism.
Conclusion: Harmonic focus is safe and applicable device for experienced thyroid surgeons. The mean operative time was significantly shorter with excellent haemo and lymphostasis.

O-6-1 PROSPECTIVE APPLICATION OF OUR NOVEL PROGNOSTIC INDEX IN THE TREATMENT OF ANAPLASTIC THYROID CARCINOMA

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Background: Anaplastic thyroid carcinoma (ATC) generally has a dismal prognosis. In order to determine the appropriate therapeutic strategy for ATC, we previously devised a prognostic index (PI) from a retrospective analysis of 44 patients treated between 1976 and 1998. The PI was based on the number of 4 unfavorable characteristics the patient possessed (acute symptoms, large tumor >5 cm, distant metastasis, and leukocytosis ≧10,000/mm3). Patients with PI ≦1 had a 62% survival at 6 months, whereas no patients with PI ≧3 survived longer than 6 months. Since 1999, when PI ≦1, aggressive multimodal treatment has been attempted to obtain the best survival results; if PI ≧3, we have recommended best supportive care (BSC) to maintain quality of life. Here, we prospectively investigated the efficacy of the PI.
Materials and Methods: 66 patients were treated between 1999 and 2008. Their PI, treatment methods and outcomes were compared with the patients before 1998.
Results: The 6-months survival rates for PI ≦1 (n=24) and PI ≧3 (n=23) were 71% and 9%, respectively (p <0.0001). The mean survival for patients with PI ≦1 after 1999 (435±76 days) was longer than before (299±51 days). 15 of 18 (83%) patients with PI ≧3 underwent aggressive treatment before 1998; however, after 1999, 8 of 23 (35%) received BSC from the beginning regardless of an identical survival.
Conclusions: Our PI is valid to anticipate the prognosis and decide the treatment policy promptly for individual patients with ATC.

O-6-2 PROGNOSTIC FACTORS OF 100 CASES WITH ANAPLASTIC THYROID CARCINOMA

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Background: Anaplastic thyroid carcinoma (ATC) is one of the most fetal malignancies. A retrospective review was performed to investigate the prognosis and the effect of aggressive multimodal treatment on this disease.
Materials and Methods: Between 1993 and 2009, 100 patients diagnosed with ATC at Ito Hospital were reviewed.
Results: There were 80 females and 20 males with a median age at diagnosis of 68 years (range, 41-90 years). Thirteen patients had a history of well-differentiated thyroid carcinoma. Six patients had a small focus of ATC in a differentiated carcinoma. All patients were retrospectively staged according to the UICC classification system (Stage IVA in 11 patients, IVB in 31 and IVC in 58). Twenty-seven patients underwent surgical treatment with complete resection and 43 patients with incomplete resection. Eighty-one patients were received radiotherapy, 58 of whom received over 40 Gy total dose and 27 patients received chemotherapy. Fifteen patients received multimodal therapy (surgery combined with radiotherapy and / or chemotherapy). The 1- year survival rates of the patients with stage IVA were 72.7%, Stage IVB were 21.3 %, and stage IVC were 6.5 %. Death was related to this disease in 82 patients (local progression in 21, to distant metastasis in 55, to both in 4, and to unknown in 2) and to other diseases in 3. Multivariate analysis showed that small focus and multimodal treatment improved survival (P<.0001).
Conclusion: Although the prognosis of most patients with ATC continues to be poor, multimodal treatment improved the outcome of anaplastic thyroid carcinoma.

O-6-3 ANAPLASTIC THYROID CARCINOMA : CLINICAL PRESENTATION AND SURVIVAL OUTCOME

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Introduction: Anaplastic Thyroid Carcinoma (ATC) is one the most aggressive malignancies known presenting as a rapid progressive tumor with poor survival outcome. The aim of this study was to review the presentation and the survival outcome between conservative and operative management in our center.
Patients and Methods: 53 consecutive patients with a confirmed diagnosis of ATC were accrued in this non randomized prospective study from 2003 to 2009.
Results: The mean age at presentation was 65 years old (ranged from 41to 85 years) and the mean duration of neck swelling was 9 years (ranged from 1 to 40 years). The mean tumor size at presentation was 9 cm (ranged from 3 to 20cm). The main indication for operative intervention was significant symptoms of obstruction ie; dysphagia (54%), dypsnoea (46%) and hoarseness of voice (72%). Forty-six patients (86%) presented with either localized invasion or distant metastasis. 16 patients were treated conservatively due to advanced presentation with progressive disease and 10 patients succumbed within 1 month from presentation. 37 patients had surgical intervention; 26 patients succumbed within 6 months of management and 7 patients survived beyond 6 months (ranged 6 to 48 months). There was no statistical significant difference in terms of better survival rate (Fisher exact test; $p = 0.157$) between conservative approach and operative management with radiotherapy.
Conclusion: Although immediate and early surgical intervention with radiotherapy for ATC may prolong a little the duration of survival, the overall prognosis of our patients diagnosed with ATC was dismal and invariably fatal.

O-6-4 MULTIMODALITY THERAPEUTIC APPROACH IN ANAPLASTIC THYROID CARCINOMA

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Purpose: Anaplastic thyroid carcinoma (ATC) is a rare disease. In contrast to gradual progression of well-differentiated thyroid cancer, ATC typically demonstrates a rapid and lethal clinical course. The aggressive nature and rarity of ATC makes it difficult to establish a standardized successful protocol, and the optimal sequence of multimodal therapy is still debated. The aim of the study is to investigate the role of multimodality treatment in patients with ATC.
Patients: 40 patients (F26, M14, 72.2±8.6 y.o.) with primary ATC treated in our hospital from 1985 to 2009.
Results: Median survival time (MST) was 133 (11-1573) days. One-year survival rate was 17.5%, 2-year survival rate was 2.5%. MST stratified by clinical stage was 195 days for IVB (n=25), 125 days for IVC (n=15), respectively. In stage IVB, the cases undergone maximal debulking surgery (ST)(n=12) survived significantly longer than those without ST (n=13)($p<0.05$). In stage IVB, the patients treated with combinations of ST, radiation (RT) and chemotherapy (CT)(n=6) survived longer than those with RT and CT (n=7). Patients treated with RT and CT (n=11) survived longer than those with RT alone (n=7). Only 7 patients, in which 5 patients were treated with ST/RT/CT, survived longer than 1 year,
Conclusion: Although the prognosis of ATC is still very dismal, ST followed by RT and CT might improve survival of patients with ATC. Prognosis of patients with ATC has not been improved for last 20 years. Novel therapeutic approaches should be considered.

O-6-5 DIFFERENTIAL EXPRESSION OF TYPE IV COLLAGEN ALPHA3 (IV), ALPHA4 (IV), AND ALPHA5 (IV) CHAINS IN THYROID CARCINOMA.

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Type IV collagen, the major component of basement membrane (BM), is composed of six genetically distinct alpha chains. We investigated the cellular regulation of these alpha (IV) chains in thyroid tissues by immunohistochemistry using alpha (IV) chain-specific antibodies. The expression of alpha chains in 21 resected thyroid cancer and neoplastic tumors was examined (papillary carcinoma;n=13, follicular carcinoma;n=3, follicular adenoma;n=5). In normal thyroid, BM of thyroid gland was composed of linear alpha 1 (IV)/alpha 2 (IV) chains and discontinuous/weakly alpha 3 (IV)/alpha 4 (IV)/alpha 5 (IV) chains. Similar immunostaining profiles were observed in benign thyroid tumor and well differentiated thyroid carcinoma. In poorly differentiated thyroid carcinoma, although alpha 1 (IV)/alpha 2 (IV) chains were continuously stained in the cancernests, the assembly of alpha 3 (IV)/alpha 4 (IV)/alpha 5 (IV) chains was completely inhibited. Alpha 6 (IV) chain was negative in all cases. The results indicate that thyroid gland forms a second network of BM composed of alpha 3 (IV)/alpha 4 (IV)/alpha 5 (IV) chains, not alpha 5 (IV)/alpha 56(IV) chains, in addition to the classic network of alpha 1 (IV)/alpha 2 (IV) chains. The expression of second network seems to be associated with the differential potential of thyroid cancer.

O-7-1 ANALYSIS OF RISK FACTORS IN FOLLICULAR THYROID CARCINOMA

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Background: Follicular carcinoma is usually diagnosed by postoperative pathological examination. In Western countries, guidelines recommend total thyroidectomy and radioiodine ablation for this cancer. However, in Japan, those additional therapies are rarely applied without distant metastasis. We conducted a retrospective analysis to find out high-risk groups that require additional therapy.
Patients and Methods: Seventy-six patients with follicular carcinoma from 1990 to 2008 underwent initial operation in our institute. Seventeen cases had distant metastasis at the time of operation. We used age (<50 or ≧ 50 years of age), gender, tumor size (<3.5cm or ≧ 3.5cm), type of invasion (minimally invasive follicular carcinoma:MIFC or widely invasive follicular carcinoma:WIFC), poorly-differentiated cells and distant metastasis at the time of operation, as variables. Capsular and vascular invasion were also used for analysis of MIFC.
Results: In univariate analysis, WIFC and distant metastasis showed significance for cause-specific death (CSD) (p=0.001, <0.0001, respectively), and multivariate analysis showed significance only for distant metastasis (p=0.003). In cases without distant metastasis, univariate analysis showed significance in WIFC (p=0.003) for CSD, and gender and WIFC for recurrence (p=0.013, <0.001, respectively). For MIFC without distant metastasis, vascular invasion has been considered as a potential predictive factor. However, we could not find any significance for either CSD or recurrence. Only gender exhibited significance for recurrence (p=0.023).
Conclusion: Based upon our analysis, WIFC is a strong predictive factor and supports the use of additional therapy. Gender (male) was suggested as a risk in MIFC, but further investigation is necessary to conclude its value.

O-7-2 PATTERN OF FOLLICULAR THYROID CANCER METASTASIS IN A SERIES OF 60 PATIENTS

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The aim is to review follicular thyroid cancer (FTC) to determine the pattern of metastasis in minimally invasive follicular thyroid cancer (MIFTC) and widely invasive follicular cancer (WIFTC) in single institution.

Methods and patients:
60 patients with diagnosis of FTC were reviewed from 1984-2009 retrospectively for patient's clinical data.

Results:
44 of 60 (73%) patients were diagnosed as MIFTC, 13(22%) were WIFTC and 3(5%) were insular or adenoma presented later with metastasis. There was a decrease in the incidence in WIFTC recently. The mean age was 42, 53 for MIFTC and WIFTC respectively. Female constituted 68%. The mean age for MIFTC, WIFTC and INSULAR with metastasis were 45.6, 46.4 and 68 respectively. All patients had thyroidectomy and 64%MIFTC, 92%WIFTC and 67% INSULAR had RAI post operatively. For MIFTC vascular invasion shows a higher incidence of metastasis than capsular invasion 43% vs. 22% respectively. Overall, 35% of patients had metastasis to lung or bone. 77% of WIFTC with metastasis half presented with metastasis as initial diagnosis, whereas of 18% of MIFTC with metastasis only 2.3% presented initially with metastasis. Death rate was 62% in the group of WIFTC and insular-adenoma combined while MIFTC had only 4.5%. MIFTC has tendency for metastasis with older age group and tumor size >4 Cm.

Conclusion:
WIFTC is an aggressive form of FTC with high risk for metastasis and death. Vascular invasion in MIFTC predicts distant metastasis. Total thyroidectomy and RAI is recommended for those high risk patients.

O-7-3 BRAF V600E MUTATION IS ASSOCIATED WITH TUMOR AGGRESSIVENESS IN PAPILLARY THYROID CANCER

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Purpose: The BRAFV600E mutation is the most common genetic alteration in thyroid cancer. Recent studies have demonstrated that BRAFV600E mutation occurs with greater frequency in patients with aggressive clinicopathologic features in papillary thyroid carcinoma (PTC). The aim of study is to evaluate the prevalence of BRAFV600E mutation and the association of high-risk clinicopathologic features with the BRAFV600E mutation in patients with PTC.
Patients and Methods: From February 2009 to August 2009, 468 patients diagnosed as thyroid cancer underwent thyroidectomy in Seoul National University Hospital. Of them 346 patients consented to enroll. Three-hundred nineteen patients were diagnosed as PTC. There were 278 female and 41 male patients and the mean age was 46.32 ± 12.03 years. Polymerase chain reaction was used to amplify BRAF exon 15 from paraffin-embedded thyroid tumor specimen and direct sequencing was used to detect BRAFV600E mutation. This prospective study was approved by institutional review board.
Results: The BRAFV600E mutation was found in 211 of 319 (66.1%) patients with PTC. BRAFV600E mutation was associated with tumor size (1cm) (69 of 86 [85.2%] vs 135 of 222 cases [62.2%]) (p=0.001), extrathyroidal extension (124 of 165[76.0%] vs 76 of 137[56.4%]) (p<0.001), and lateral cervical lymph node metastases (27 of 32[84.4%] vs 177 of 276[64.1%]) (p=0.022). BRAFV600E mutation was not associated with age, sex, central lymph node metastases.
Conclusions: BRAFV600E mutation was associated with poor prognostic factors in patient with PTC. BRAFV600E mutation might be used as a potential prognostic factor in PTC patients.

Index Words: papillary thyroid cancer, BRAF mutation

O-7-4 THE CLINICOPATHOLOGICAL FEATURES AND THE POSTOPERATIVE COMPLICATIONS IN COMPLETION THYROIDECTOMY FOR RECURRENT PAPILLARY THYROID CARCINOMA

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Purpose

Completion thyroidectomy after less than total thyroidectomy is needed for treatment of recurrent papillary thyroid carcinoma(PTC). The aim of this study is to evaluate the clinicopathological features and the postoperative complications of completion thyroidectomy for patients with recurrent PTC.

Methods

Total 94 PTC patients who had undergone prior less than total thyroidectomy underwent completion thyroidectomy for recurrence from March 1986 to June 2009. We analyzed retrospectively the clinicopathological features and postoperative complications.

Results

At initial operation, mean age was 38.2 years old. The central node metastasis was found in 37 cases and the extrathyroidal invasion was found in 12 cases. Mean interval time between the initial operation to the completion thyroidectomy was 76.6 months. Fifty six performed a completion thyroidectomy only and 38 performed a completion thyroidectomy combined with a modified radical neck dissection. In combined group, the central neck node metastasis and extrathyroidal invasion at initial operation were significantly frequent than a completion thyroidectomy only group. The Postoperative complications were 14 cases of transient and 8 cases of permanent hypocalcemia and there were no significant differences between two groups.

Conclusion

In completion thyroidectomy, it is important to check lateral neck nodes for metastasis when the central neck node metastasis or the extrathyroidal invasion was in initial operation, and it can be done safely without severe complications although combined with modified radical neck dissection.

O-7-5 THYROID CARCINOMA: AN 11-YEAR EXPERIENCE IN ONE INSTITUTION

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Background

Thyroid cancer is an uncommon cancer world-wide. In Malaysia, it is the 9th most common cancer in women and the18th in men. In this study, we analysed the data on thyroid cancer from one institution over an 11 year period. We also studied whether there were differences in thyroid cancer characteristics between the major ethnic groups, namely Malays, Chinese and Indians in Malaysia.

Methods

This is a retrospective cohort study covering all patients treated for thyroid cancer from 1997 to 2007. We compiled data covering demographics, pathology and prognostic indicators. Survival rates for each variant of thyroid cancer and for the different ethnic groups were calculated.

Results

335 patients with thyroid carcinoma were treated in the time period. The majority of patients were females (80.6%), above 40 years old (64.8%) and of Chinese ethnicity (45.6%). Papillary thyroid carcinoma (PTC) was the commonest thyroid cancer variant (70.1%) followed by follicular thyroid carcinoma (FTC) (23.0%). Overall 5 year survival was longest in the Chinese (87.3%) followed by Indians (84.8%) and Malays (84.0%). The overall 5 year survival for PTC and FTC was 90.3% and 81.2% respectively. Survival rates for PTC were highest in the Chinese and for FTC, in Indians. The mean survival for medullary thyroid carcinoma was 94 months and 14 months for anaplastic thyroid cancer.

Conclusions

Differentiated thyroid cancers have a good prognosis and long term survival compares favourably with published data. The most significant prognostic factor was age. Ethnicity was not a significant prognostic factor.

O-7-6 DOES PAPILLARY THYROID MICROCARCINOMA OF MALE BEHAVE MORE AGGRESSIVELY THAN FEMALE?

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Male gender is known to poor prognostic factor of papillary thyroid carcinoma (PTC). We investigated biological behavior of PTMC in male patients because PTMC is known to behave indolently.
154 (15.5%) male and 838 (84.5%) female patients underwent primary operation due to PTC at National Cancer Center, Korea from 2003 to 2008. We reviewed clinico-pathological characteristics of the patients retrospectively. Median follow-up period was 39 months (range 2-80 months).
Total thyroidectomy was done to 133(86.4%) among 154 male patients. Compared to female patients, male patients have more frequent central lymph node metastasis, have frequent lymphatic invasion, and underwent MRND more often ($p<0.0001$, respectively). Five year relapse free survival rate was 78.3% in men and 93.1% in female ($p=0.0017$). 78 patients (15.7%) were male among 529 patients diagnosed to PTMC. Central neck and lateral neck lymph node metastasis was more often found in male than in female patients even in PTMC ($p=0.012$ and $p=0.002$, respectively). However, 5 year relapse free survival was not different between male and female PTMC patients (98.2% vs. 96.1%, $p=0.08$). In multivariate analysis, male gender was independent significant risk factor of recurrence in PTC ($p=0.045$, 95% CI=1.021-6.679). However, male gender was not an independent risk factor of recurrence in PTMC ($p=0.482$, 95% CI=0.035-4.832).
Male PTCs are more likely to have neck lymph node metastasis and have higher recurrence rate than female PTC. However, male gender was not an independent risk factor of recurrence in PTMC. We may anticipate better prognosis in case of male PTMC patients.

O-8-1 TREATMENT AND PROGNOSIS OF THYROID CANCER WITH LARYNGEAL INVASION

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Laryngeal invasion worsens prognosis in patients with thyroid cancer. The extent of resection and the effectiveness of adjuvant therapy such as external radiation therapy (RT) are still controversial. We present here treatment and prognosis of thyroid cancer patients with laryngeal invasion.
From 1946 to 2005, a total of 309 patients underwent thyroidectomy for thyroid cancer with laryngeal invasion in our institute. The histology was papillary cancer (284 cases), follicular cancer (10 cases), anaplastic cancer (13 cases) and others (2 cases). The average age of the patients were 56±15 years old, and curative resection were performed in 223 patients (72.1%). In patients underwent curative operation, the 10-years and 20-years survival rate were 92.1% and 86.0%, respectively. On the other hand, the 10-years and 20-years survival rate for patients underwent non-curative operation were 53.7% and 32.3%, respectively. Furthermore, we analyzed recently 92 patients with laryngeal invasion from 1997 to 2005. Radical resection for local disease with thyroid cancer was performed in 63 patients (68.5%). In these cases, postoperative RT provided good local disease-free survival in patients with radical resection.
In conclusion, radical resection should be performed and post operative RT is recommended for patients with laryngeal invasion thyroid cancer.

O-8-2 ENDOSCOPIC TUMOR ABLATION FOR INTRA-TRACHEAL INVASION OF THYROID CANCER

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Objectives We have performed airway dilatation for patients who have had inoperable airway invasion of thyroid cancer to maintain patent airway and/or control bleeding from the tumor. We investigated the effectiveness of various modality of airway dilatation.
Methods Seven patients who underwent airway dilatation without stenting were included in this study. The patients were, 45-84 years old (mean 67), 3 women and 4 men, of which 6 patients were diagnosed as the relapse after surgery, and all patients were diagnosed as thyroid papillary carcinoma. Follow-up period ranged from 24-91months (mean 39). Airway dilatation was performed under rigid bronchoscope by the cauterization of the tumor by combining of the use of Nd-YAG laser, argon plasma coagulater, and microwave coagulation therapy.
Results Tumor was relatively hard and extremely hemorrhagic, therefore, hemorrhage control was vital. The use of rigid bronchoscope, hemorrhage control was performed relatively safely. It was essential to perform airway dilatation by combining of various modality, and utilizing the respective features.
Conclusions Thyroid cancer patients, in most cases, possess relatively long term survival, hence treatment taking into account the QOL should also be considered rather than carrying out a radical operation.

O-8-3 withdrawn

O-8-4 RECURRENT LARYNGEAL NERVE DELIBERATION AND RECONSTRUCTION DURING THE REOPERATION DUE TO THYROID CANCER AND RECURRENT GOITER

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Introduction: Recurrent laryngeal nerve (RLN) palsy is a major obstacle in thyroid and parathyroid surgery. Permanent RLN paralysis was reported in 0.5 to 10% of cases.
RLN injuries are more frequent during the operation and reoperations of cancer and recurrent goiter.
Patients and Methods: We reoperated nine patients who had been previously operated in regional hospitals. RLN paralysis was verified by direct laryngoscopy. We explored paratracheal regions, identified RLN, the point of suture, resection or infiltration. We have performed nerve deliberation due to ligation in five cases, direct suture in two and ansa cervicalis RLN anastomosis (ARA) using Myuachi technique in two cases.
Results: We performed reopearations due to the thyroid cancer recurrence in eight patients and recurrent goiter in one patient within 3 months to 23 years after the first surgery. After removing the sutures and deliberating RLN and after the direct suture or ARA we observed it's recovery within 3 weeks to 6 months. The rate of RLN recovery was verified by postoperative direct laryngoscopy. It is important to underline that if the nerves are directly anastomosed, vocal cords don`t regain normal movement and are usually fixed in the median position. The patient`s voice improves because reinervated cords recover from atrophy and restore tension during phonation which is shown on audio recording.
Conclusion: It is important to explore the neck in order to identify RLN and to deliberate it in the case of ligation. The ultimate method to evaluate quantitatively the voice recovery is the maximum phonation time.

O-8-5 ZOLEDRONIC ACID IN THE TREATMENT OF BONE METASTASIS FROM DIFFERENTIATED THYROID CARCINOMA

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[Objective]
A retrospective study to investigate the efficacy of zoledronic acid (ZA) for the treatment of bone metastasis (BM) from differentiated thyroid carcinoma (DTC) was done.
[Patients and Methods]
From 1976 to 2008, a total of 67 patients with BM from DTC were treated. Among them, 29 evaluable patients who did not undergo bisphosphonate (BP)-therapy were defined as groupA and 23 patients who received ZA were defined as groupB. GroupA comprised 8 men and 21 women, including 17 papillary thyroid carcinoma (PTC), 11 follicular thyroid carcinoma (FTC), and 1 medullary thyroid carcinoma (MTC). Mean age at BM presentation was 59 years (range, 32-77 years). Mean duration of follow-up after detection of BM was 41 months. GroupB consisted of 7 men and 16 women, including 9 PTC, 13 FTC, and 1 MTC. Mean age was 60 years (range, 40-73 years) and mean duration of follow-up was 21 months. The primary efficacy endpoint was the percentage of patients with skeletal-related events (SREs), which were defined as bone fracture, spinal cord compression, or hypercalcemia. Secondary endpoint was the interval between presentation of BM and that of SRE.
[Results]
SREs occurred in significantly lower frequency in groupB (3 patients, 13%) than groupA (14 patients, 48%) ($p=0.007$). The use of ZA delayed the time of first SRE ($p=0.03$, log-rank test). Two cases with BP-related osteonecrosis of the jaw were observed in groupB.
[Conclusion]
Treatment with ZA was effective in both reducing and delaying SRE in patients with BM from DTC.

O-8-6 LOCALLY AGGRESSIVE DIFFERENTIATED THYROID CANCER: RATIONAL VOLUME OF SURGERY

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Background. There are two controversial approaches for advanced thyroid cancer (TC) surgery: resection of tumor and invaded adjacent structures or shaving, tangential excision of tumor invaded larynx and trachea.
Methods. Totally 3109 (13.0%) TC of 23982 patients were operated on between 1973 and 2008. 487 (20.8%) of 2337 TC had wide extrathyroid extending. Thyroidectomy and adjacent organ resections were performed in 279 (11.9%/57.3%) cases.
Results. There were 26.8% males and 73.2% females (1:2.7), with average age 61.2±3.6. Those parameters were significantly differing with those of common TC group (1:7.4; 51.6±1.7). Local metastases were found in 63.4%. Morphological study has shown papillary - in 62.9%, follicular - in 24.8%, medullar TC - in 12.3%. TC 1-3 degrees extensions were found at neck and larynx muscles (73.8%), RLN (37.9%), trachea (35.2%), pharynx and esophagus (23.8%), main vessels (21.9%). Tumors were deleted completely in 76.7%. Transsternal approach was used in 3.2%. Sleeve aerodigestive organs resections were performed in 17 (9.9%) with 5.9 % of postoperative lethality, 23.5% - relapses, 35.7 and 7.1% of 5 and 10 yrs survival rates. “Shave” procedure (133/70.0%) and wedge resections (40/21.0%) have used with better immediate and remount results: 2.6%, 11.0%, 80.0% and 74.7% rates accordingly. Specific complications observed in 3.2%, including recurrent laryngeal nerves injures (1.8%) and hyperparathyroidism (1.4%). Pre- and postoperative distant TC metastases were found in 11.5%.
Conclusion. Organ saving combined operations provided recovery or significant prolongation of majority patient’s life with better its quality in compare with patients underwent sleeve aerodigestive organs resection.

O-9-1 THYROID CANCER DEVELOPMENT IN CHERNOBYL AND IN HIROSHIMA: THE EFFORT TO FILL THE 10 YEARS BLANK FOLLOWING THE A-BOMB EXPLOSION IN HIROSHIMA

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Difference and/or related factors of thyroid cancer development following exposure in Hiroshima and Chernobyl has been studied. We have tried to fill up the 10 years blank after the A-Bomb exposure in Hiroshima about the thyroid cancer occurrence, through the thyroid health examinations in Belarus and Ukraine, and the new studies using the throid tissues of the A-bomb exposed survivors in Hiroshima. From these studies, following results were obtained. (1)urinary iodine level in Chernobyl was, about one third of that in Hiroshima. (2) In the non-tumorus tissues of thyroid, atypical nuclear atypism (ANA) was found, and apparent in the heavily exposed children in Chernobyl and also in the exposed survivors in Hiroshima. (3) RET/PTC rearragement in thyroid cancer was found in the exposed children in Chernobyl and in the proximally exposed survivors in Hiroshima. (4) TSH-receptor(R) sensitivity to the TSH stimulation showed significant decrease with the increase of age (Hiroshima). (5) And the increasing trend of this TSH mRNA expression with the increase of estrogen-R mRNA expression in cancer tissues were found in Hiroshima. (6) E-R in thyroid was higher in female than in male (Hiroshima). (7) Chronic thyroiditis was not related to the radiation exposure in Chernobyl and Hiroshima. (8) Growth of thyroid itself while children might be affected the increase of thyoid cancer in childhood in Chernobyl. Thyroid cancer development following radiation exposure will be explained from these datas, and discussed about the poorly differentiated cancer of thyroid in the exposed survivors among the aged exposed survivors.

O-9-2 PAPILLARY CARCINOMA THYROID - INCREASE IN INCIDENCE AND MODALITIES OF TREATMENT IN SOUTHERN MOST INDIA

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Introduction

The incidence of thyroid disease in general, as well as in carcinoma is increasing. In our study of 4500 cases papillary carcionoma of thyroid increase is two fold when compared to yester years.

Materials and Methods

An analysis of 4500 cases from August 1988 to August 2008, the incidence of papillary Ca thyroid is 481. Of these 260 cases were treated during 1988 to 2003, the remaining 221 cases were identified and treated within five years from 2004 to 2008. The investigations, confirmations and modalities of treatment offered are discussed. We prefer to do Total thyroidectomy in papillary Ca of thyroid since it is known for multifocality, bilateral involvement, invasion of cervical lymphnodes and which facilitates radio iodine for identifying and ablating the micro metastasis. The suppressive dose of thyroxine also prevents the recurrence.

Results

Results after multi modality treatment was highly encouraging and the quality of life was also as normal as that of normal persons.

Conclusion

The rise in the incidence of papillary Ca of thyroid is due to the awareness of thyroid problems by the public and reporting to the medical fraternity earlier and also because of the newer investigating modalities useful to arrive at the correct diagnosis.

O-9-3 NON ENDEMIC LARGE GOITER: WHAT IS THE RISK OF MALIGNANCY ?

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Background: Large goiters are common in Malaysia. Appearance and presentation of such goiters always raises the concern of underlying malignancy to both the physicians and patients.
Aims:
1. To ascertain the prevalence of malignancy in large goiters.
2. To determine the role of Fine Needle Aspiration Cytology (FNAC) in detecting malignancy in large goiters.
Methods: Prospective analysis of patients operated from July 2007 till July 2009. Based on definition of large goiters, patients with resected specimen weight of more than 50g in hemi thyroidectomies and more than 100g in total procedures were assimilated into the study.
Setting: State hospital
Results: Of the 211 patients who had thyroidectomies over 2 years, 158 (74.8%) had large goiters. Heaviest gland weighed at 910g. Mean weight of gland resected was 273g. 37 patients (23.4%) harboured malignancy. FNAC revealed 27 benign lesions and 5 indeterminate biopsies when all were confirmed to be malignant histopathologically. Papillary carcinoma was the most common occurrence (45.6%) followed by occult malignancies in the background of multi nodular goiter (32.4%). There were 6 follicular carcinomas and 2 lymphomas.
Conclusion: Malignancy in large goiters prevailed at 23.6% in our center. Fine Needle Aspiration Cytology is not a reliable diagnostic tool in detecting malignancies within large goiters. Therefore, patients with large goiters should be advised for surgery.

O-9-4 | 18 YEARS SURGICAL EXPERIENCE OF SUBSTERNAL GOITRES FROM A TERTIARY CARE REFERRAL CENTRE IN INDIA

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Background: Substernal goitre is the entity which requires the super-specialty management. Aim of this study is to evaluate the clinical presentations, management and outcome of substernal goitre from India.
Methods : Between 1990 to 2009, 131 patients were reviewed with substernal goitre admitted at our institute. Their clinical presentations, management and outcome were evaluated.
Results: n= 131, mean age= 49.87yrs; M:F 1:2.1, mean duration = 124months. 61%- grade 2 and 36% grade 3 goitres. 47%- no compression, 42%- dyspnoea, 34% dysphagia, 24%- hoarseness; 82%- suspicious of malignancy. Per operatively: mean gland weight= 274gms, 79% underwent TT, 13%- TT + LND, 5%- NTT and 3%- debulking. By transcervical route only 121, median sternotomy =8 and thoracotomy =2. Haemorrhage- 5 , no RLN injury, oesophageal injury = 1, parathyroid auto-transplantation, n= 30. Symptomatic hypocalcaemia n=28, biochemical hypocalcaemia n=20, temporary VC palsy = 7, wound complications- 11%; follow up: 0.8%- permanent hypocalcaemia, 1.5%- permanent VC palsy. Overall mortality n= 8(cancer thyroid=6, benign thyroid=2).
Conclusion: The incidence of substernal goitres among the goiter patients are not uncommon; late presented for surgery is usual. Fair possibility of develop toxicity and malignancy. Majority of patients are asymptomatic and they are operate mainly due to the goitre size and suspicious of malignancy. Anterior substernal goitres are common, majority can be managed well with transcervical route . Morbidity in our study is comparable even with extremes of presentations and difficulties in surgery. So the morbidity of such cases acceptable in the hands of experienced endocrine surgeons.

O-9-5 | POCKETS OF HIGH PREVALENCE OF GOITRES IN SRI LANKA

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Introduction: Studies have shown increased prevalence of goitre in certain parts of Sri Lanka which were considered to be in a "goitre belt". Other studies have shown that there is a general prevalence throughout the country, which refutes the concept of a goitre belt. An island wide study was undertaken to study the epidemiology of goitres.
Method: The country was divided into 6 zones based on the rainfall pattern and geography.18 Grama Niladhari (GN) areas selected from each zone by randomization.108 (6x18) GN areas were selected.50 people from each GN area were examined for goitre. Starting from a selected house hold, selected at random , all eligible people (in that house) were included in the sample. Then the closet household next to the selected household was sampled. The process was repeated till 50 subjects were sampled. Prevalence data was calculated using the STATA package and pockets of high prevalence were analyzed.
Results: 426 goitres were detected in 5200 people . A General prevalence rate was 6.83% . In ALL 6 Zones there were pockets of high prevalence exceeding 15%. This is unlikely to be purely due to iodine deficiency. Zone1 -Wet Zone Costal -Omatta -18.5,Wet Zone Hills -Thiyambarahena -18.5, Dry Zone East Thampalawela -15.0 ,Dry Zone North Central Kokmaduwa - 21.6, intermediate Zone North Epaladeniya- 21.2, Intermediate Zone South Batheegama West-17.5.
Conclusions: There are pockets of High prevalence in all the Zones. Detailed study of these pockets needs to be undertaken.

O-9-6 OUTCOME OF TREATMENT FOR AUTONOMOUSLY FUNCTIONING THYROID NODULES PATIENTS IN OUR HOSPITAL: SURGERY, RADIOIODINE AND ETHANOL INJECTION

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Background: Thyrotoxicosis related to thyroid autonomy can easily be controlled by antithyroid drugs, but they do not induce cure or lasting remission. Surgical treatment has been performed as a standard therapy for autonomous thyroid nodules in Japan. Radioiodine therapy (RI) and percutaneous ethanol injection treatment (PEIT) have been available on our hospital recently.
Object: To evaluate outcome of the treatment modalities for autonomously functioning thyroid nodules, we performed a retrospective analysis of 163 patients with autonomously functioning thyroid nodules.
Method: Among a total 163 patients, thyroid function was hyperthyroidism in 115 patients, latent hyperthyroidism in 48 patients at their first medical examinations. The diagnosis of autonomously functioning thyroid nodule (AFTN) and toxic multinodular goiter (TMNG) was based on clinical database: hyperthyroidism, serum TRAb was negative, thyroid nodules were revealed by thyroid sintiscan.
Result: One hundred thirty patients were diagnosed as AFTN and thirty-three patients were diagnosed as TMNG. RI was performed in 55 patients, PEIT was performed in 56 patients and surgery was performed in 52 patients. After treatment, persistence or reccurence of thyrotoxicosis was in 12.7% of RI, 46.4% of PEIT and nil of surgery. Occurrence of hypothyroidism was in 14.5% of RI, 3.5% of PEIT and 28.8% of surgery.
Conclusion: Surgical advantage is it can induce a rapid attainment of euthryoidism. RI therapy pretends not to attain euthyroidism after treatment, because the RI follow-up phase is short in this study.

O-10-1 CHANGING TRENDS IN SURGICAL INDICATIONS FOR GRAVE'S DISEASE: A SINGLE INSTITUTION'S EXPERIENCE OVER 14 YEARS

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Background
Although surgery is an accepted treatment modality for Grave's disease (GD), the indications for surgery remain poorly defined. Our study aimed to evaluate the changing trends in surgical indications and types of surgery for GD over a 14 year period.
Methods
From 1995 to 2008, a total of 346 patients with GD was reviewed. All patients were treated with at least 18-months of medication and when they relapsed, were offered RAI therapy as an alternative treatment prior to surgery. They were divided into 2 groups, according to the year of operation (period I: 1995 to 2001 [n=180] and period II: 2002 to 2008 [n=166]). Patient demographics, surgical indications and outcomes of surgery were compared between the two periods.
Results
The median number of relapses before surgery was significantly higher in period I than II (2 vs 1, $p<0.0001$). Patient preference, compressive symptoms, Grave's ophthalmopathy (GO) and refusal for RAI were the 4 most common indications in both periods. However, GO as surgical indication was increased (15.43% vs 29.25%, $p = 0.002$) while refusal for RAI was decreased in period II (22.83% vs 6.80%, $p< 0.001$). Significantly more total thyroidectomy and fewer subtotal thyroidectomy were performed in period II (96.9% vs 26.7% and 16.9% vs 73.3%, $p<0.001$). Rates of permanent hypoparathyroidism and RLN injury were comparable.
Conclusions
Trends in surgical indications for GD have changed with GO becoming a better accepted indication while refusal for RAI became less accepted. Despite more extensive thyroid resection, long-term morbidity did not change significantly.

O-10-2 SURGICAL MANAGEMENT OF GRAVES' DISEASE. RESULTS AND CHANGING TREND IN A SINGLE INSTITUTION OVER A 19-YEAR PERIOD

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Introduction:The optimal surgical treatment for Graves' disease (GD) is controversial with varying treatment policy between countries. We report our experience with thyroidectomy for GD and examine for changes in our surgical approach and outcome over the past 19 years. Patients and Methods:Data were collected retrospectively on patients with thyroidectomy performed for GD from 1991 to 2009. This included patient's demographics, type of surgery performed, postoperative complications and thyroid status. The 19 years were divided into 3 periods: 1991-1999 (A), 2000-2004 (B) and 2005-2009 (C) to observe for any trend. Results:Data were available for 99 patients with 48, 24 and 27 in period A, B and C respectively. 84% were female with mean age of 32 years. Subtotal thyroidectomy (ST) was performed in 87% of cases with mean thyroid remnant of 7g. There were no cases of permanent recurrent laryngeal nerve palsy. 5% had hypocalcemia requiring prolonged calcium supplements. 10% had recurrent hyperthyroidism and were treated with anti-thyroid medications and radioiodine ablation. 58% developed hypothyroidism requiring lifelong thyroxine. We observed that recent patients were presenting at an older age with larger goitre. There was an increase in operating time but reduced hospitalization stay. Hyperthyroidism rate corresponded to the amount of thyroid remnant. Period C had the highest hypothyroidism rate as TT were performed for 44% of patients. Conclusion:Surgery remains a safe option for GD. Postoperative thyroid function in patients with ST is dependent on the amount of remnant. TT with thyroxine replacement should be considered in selected patients to avoid the risk of recurrence.

O-10-3 SURGICAL STRATEGY FOR GRAVES' DISEASE IN NAGASAKI, JAPAN

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Surgery is one of the treatments of choice in selected patients with Graves' disease. Usually surgery was advised by endocrinologist if patient's therapeutical treatment was unsuccessful. So surgery must be the last treatment for the patients with Graves' disease who was referred to surgeon. We have adopted video-assisted thyroidectomy especially in the patients with Graves' disease of small thyroid. The purpose of this study is to show the feasibility of this video-assisted approach for Graves' disease.
Patients: Between March, 2000 and November, 2009, 94 patients (86 females and 9 males) with a mean age of 33.8 years with Graves' disease underwent video assisted subtotal/near-total thyroidectomy.
Results: All patients underwent thyroidectomy using video-assisted technique without conversion to open surgery. The mean operative time was 233 min, which was reduced by 176 min in the latest 10 patients. The average intra operative blood loss was 139 g, but no blood infusion was necessary. The mean weight of the resected specimens was 38.6 g. Temporary recurrent laryngeal nerve palsy was noted in 6 patients (6.4%) followed by spontaneous recovery. Mean daily doses of T4 replacement after operation were 27.8 ug and102.1 ug, respectively. Hyperthyroidism recurred in only 4 patients (4.3 %).
Conclusions: Video-assisted subtotal/near-total thyroidectomy must be one of the options for surgical procedures for Graves' disease.

O-11-1 LAPAROSCOPIC ADRENAL-SPARING SURGERY FOR PHEOCHROMOCYTOMA IN MULTIPLE ENDOCRINE NEOPLASIA IIA

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Multiple endocrine neoplasia type 2A (MEN2A) is a well-known pheochromocytoma associated syndorome, however the treatment of pheochromocytoma with this disease is controversial. Although laroscopic adrenal sparing surgery is technically difficult, it is minimally invasive and recommended as the treatment of choice for pheochromocytoma in MEN2 to avoid life-long dependency from steroid placement. To evaluate efficacy and feasibility of laparoscopic adrenal-sparing surgery, we report the result of clinical study of 8 cases (6 family lines) of pheochromocytomas in genetically diagnosed MEN2A between 1994 and 2009. The group of patients consisted of four women and men with a mean age of 39.6 (25-69) years. Median follow-up was 48.5 (1-164) months. All patients were diagnosed by the examinations of CT scan, urinary cathecholamine concentration on 24-h collection and MIBG-scintigraphy. Three patients had unilateral lesion, two had bilateral lesions and three had unilateral lesion following contralateral adrenalectomy for pheocromocytoma. Patients with unilateral lesion were operated by laparoscopic transabdominal adrenalectomy and the others by laparoscopic transabdominal adrenal-sparing surgery with only two-weeks of corticosteroid therapy. In one patient, a conversion to an open procedure was necessary because of bleeding. After surgery, all patients were observed by means of CT scan and measurement of the blood-cathcholamine levels. None of recurrent pheochromocytoma was seen during the follow-up periods. Substantial morbidity and mortality are associated with addisonian crisis after bilateral adrenalectomy. Laparoscopic adrenal sparing surgery is safe and feasible for the treatment of hereditary bilateral pheochromocytoma in MEN2.

O-11-2 MEN 2A. A CASE REPORT AND SURGICAL STRATEGY IN JAPAN

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Medullary thyroid carcinoma (MTC) comprises 1 to 2 % of all thyroid malignancies in Japan. It is much rarer compared to other countries. We report on a family with MEN2A that includes ten patients with thyroid carcinoma and three gene carriers.
There are six MTC patients in which one patient had a pheochromocytoma and the other had Hirschsprung's disease. Both of them were operated on. All six patients underwent total thyroidecomies. Their ages were 23, 25, 37, 47, 51, and 67 years. The observation period after surgery is from 9 to 26 years. One patient who underwent surgery at 37 years of age had cervical lymph nodes recurrence 4 years later and died due to ARDS just after surgery for dissection of lymph nodes. The others are alive without relapse. RET gene analysis shows six patients with mutation at codon 618 of exon 10. Three of them are female carriers who are 34, 9 and 7 years old. All of them are being followed up by periodic biochemical examinations and ultrasonography during the last two years because there is no evidence of MTC.
Although total thyroidectomy in infancy or early childhood is standard treatment for hereditary MTC in other countries of the world, it is not widely accepted in Japan.
We will discuss the Japanese surgical strategy that differs from other countries.

O-11-3 RET PROTO-ONCOGENE GENETIC SCREENING IN PATIENTS WITH MEDULLARY THYROID CARCINOMA: THE KOREA SINGLE INSTITUTIONAL EXPERIENCE

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Purpose:Genetic screening of RET proto-oncogene is powerful method for the early identification of MTC. The incidence of MTC is very low in Korea. Also, Korean is unwilling to genetic test generally. We report the results RET proto-oncogene genetic screening in Korea single institution. Methods:We conducted a retrospective review of the medical records of 104 patients with MTC, who underwent thyroidectomy, from 1982 to October 2009. Among those, we performed direct sequencing of exon 10, 11, 13, 14, 15, and 16 in patients and their relatives who agreed about genetic screening test. Results:Twenty two of 54 patients (40.7%) were identified as having RET mutation. Seven of 15 their relatives were positive of RET mutation. Ten patients had MEN 2A, 4 patients with MEN 2B, 2 patients with FMTC, and one patient had unclassification type. The remaining 5 patients were thought to have sporadic. In MEN 2A, Eight patients had RET mutation in codon 634, and codon 600, codon 611 were positive each patient. Four of patients with MEN 2B had all mutation in codon 918. Two patients with FMTC had mutation in codon 618. The five patients with sporadic MTC had mutation each codon 618, 619, 641, 691, and 790. Three relatives with MEN 2A family history had mutation in codon 634, four relatives with FMTC family history in codon 618. Conclusion:RET proto-oncogene mutation were mainly codon 634, codon 618 in our results. No relation could be found between the genotype and phenotype, further studies will be required to verify this.

O-11-4 CRITERIA FOR *MEN1* GENE TESTING IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

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(Introduction) Multiple endocrine neoplasia type 1 (MEN 1) is an autosomal dominant inherited disease and primary hyperparathyroidism (pHPT) is found in more than 90% of MEN 1 patients. MEN 1 patients with pHPT sometimes are misdiagnosed as apparently non-hereditary single glandular tumor and then we overlook MEN 1. In this study, we investigated and decided a selection criteria for *MEN1* gene testing.
(Patients and Methods) *MEN1* gene testing were performed in 262 patients with pHPT between 2000 and 2009 in our hospital. Gene diagnosis was made by sequencing of exons 2-10 of the *MEN1* gene. From the literature review, we chose 4 clinical criteria associated with MEN 1, A) younger age (below 40), B) family history of pHPT, C) multiglandular parathyroid disease D) presence of other endocrine disease (pituitary or gastroentero-pancreatic disease).
(Results) There were no *MEN1* germline mutation in 120 patients who did not meet all 4 criteria and 142 patients who met at least 1 criterion were analysed subsequently. Mutation rate increased according to the number of criteria (12% who met only 1 criterion, 50% who met 2 criteria, 73% who met 3 criteria, 100% who met all criteria). The sensitivity and specificity of the *MEN1* germline mutation in patients who met more than 2 criteria were 73% and 81%, respectively, and is supposed to be the most suitable selection.
(Conclusion) When patients with pHPT met more than 2 criteria, *MEN1* gene diagnosis should be recommended.

O-12-1 EVALUATION OF ONCOTYPE DX RECURRENCE SCORE AS A PROGNOSTIC FACTOR IN JAPANESE WOMEN WITH ESTROGEN RECEPTOR-POSITIVE, NODE-NEGATIVE PRIMARY STAGE I OR IIA BREAST CANCER

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Purpose: We evaluated the Oncotype DX Breast Cancer Assay for identifying candidates for adjuvant chemotherapy in patients with estrogen receptor(ER)-positive, node-negative primary Stage I or IIA breast cancer.
Methods: A retrospective case-control study was conducted on 40 patients who underwent surgery between 2000 and 2008. Cases (n = 10) were patients who had metastases after surgery. Controls (n = 30) were patients who did not develop metastases and were individually matched to their case with respect to age. All patients were analyzed with regard to age, tumor size, histological grade, HER2 status, and the values of Recurrence Score (RS), ER score and PgR score generated by Oncotype DX. We also divided the patients into low, intermediate, or high-risk groups according to individual RS values.
Results: RS, risk category, and histological grade were associated with metastases. However, ER status, tumor size and PgR status were not associated with metastases. Histological grade was associated with RS value and the distribution pattern of risk category ($P < 0.001$ for each). The results from multivariable logistic regression analysis showed that histological grade 3 was strongly associated with metastasis. Although statistically insignificant, high values of RS was also associated with metastasis, with OR being 2.85 (95%CI 0.07-115.5), after adjustment for age, ER, PgR, ly and histological grade.
Conclusions: Both histological grade and risk-category classification were effective in identifying women at risk of developing metastases after initial therapy for ER-positive, node-negative Stage I or IIA breast cancer.

O-12-2 FUSION OF MRI AND SONOGRAPHY IMAGE FOR BREAST CANCER EVALUATION USING REAL-TIME VIRTUAL SONOGRAPHY WITH MAGNETIC NAVIGATION

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Objective: We recently developed a real-time virtual sonography (RVS) system that enables simultaneous display of both sonography and magnetic resonance imaging (MRI) cutaway images of the same site in real time. The aim of this study was to evaluate the role of RVS in the management of enhancing lesions visualized with MRI. Methods: Between June 2006 and April 2007, 65 patients underwent MRI for staging of known breast cancer at our hospital. All patients were examined using MMG, sonography, MRI and RVS before surgical resection. Results were correlated with histopathologic findings. MRI was obtained on a 1.5 T imager, with the patient in the supine position using a flexible body surface coil. Detection rate was determined for index tumors and incidental enhancing lesions (IELs), with or without RVS. Results: Overall sensitivity for detecting index tumors was 85% (55/65) for mammography,91% (59/65) for sonography, 97% (63/65) for MRI and 98% (64/65) for RVS. IELs were found in 26% (17/65) of the patients. Of 23 IELs that were detected by MRI, 30% (7/23) of IELs could be identified on repeated sonography alone, but 83% (19/23) of them were identified using the RVS system (P=0.001). Our results suggest that the RVS system can identify enhancing breast lesions with excellent accuracy.

O-12-3 ENDOSCOPIC SENTINEL NODE BIOPSY CAN BE FACILITATED BY SPECT-FUSED 3D-CT MAMMARY LYPMPHOGRAPHY.

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Objectives. Video-assisted breast surgery (VABS) has been proven safe and aesthetic. We also applied it for sentinel node (SN) biopsy. It needs only 1 cm long skin incision. However, it sometimes has difficulty in detecting the dye. The radioisotope (RI) may not be uptaken by true SN. We firstly succeeded to fuse the single photon emission computed tomography (SPECT) with 3D-CT lymphography (LG). It can show the detailed position of all SN with or without RI uptake.

Method. 3D-CT LG was performed on the day before surgery. Above the tumor and near the areola, Iopamidol was injected subcutaneously. Images of CT were taken at 1 and 3 min after injection to produce 3D images. ^{99m}Tc phytate was injected, and SPECT was taken after 2 hours. We fused it with 3D-CT LG. SN biopsy was performed endoscopically with dye and RI. The endoscopic view presented stained lymph ducts and SNs, which can be navigated by RI detector probe.

Results. We have performed SN biopsy by dye method on 50 patients, with 3D-CT LG on 160 patients, and with SPECT fused 3D-CT LG on 20 patients. All RI positive SNs coincided with 3D-CT LG. We could detect their position by RI detector probe during surgery. The average sampled number was 2.3. The dye-negative SN and RI-negative SN could be removed. The SN metastases were 45 (28%). The other non-SN of axillary nodes could be observed.

Conclusions. The endoscopic SN biopsy is aesthetic and less invasive, which is facilitated by SPECT-fused 3D-CT LG.

O-13-1 IS CENTRAL COMPARTMENT NECK DISSECTION DANGEROUS FOR THYROID CANCER PATIENTS?

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Background. It is considered to be that central neck dissection (CND) performance is connected with danger of injures of recurrent laryngeal nerve (RLN) and parathyroid. Current offers straddle from selective CND for high-risk patients only to regular bilat-eral dissection.

Materials and methods. 22140 thyroid patients were operated on in our Center, includ-ing 13.2% TC (2913) with dynamics of 6.7 to 24.8% during 1977-2007. In 1145 cases (80.0% female) CND were performed. Average age of patients achieved 48.4+2.1.

Results. In 1973 - 1997 period 183 (16.2%) of 1133 TC patients were undergone CND as part of radical neck dissections. Thyroidectomy and biopsy of 6 lymphatic nodes group were performed under visual control of RLN and parathyroid glands (PTG) since 1985 and CND since 1997. In recent 10 years quantity of CND increased significantly - to 67.7% of 1421 TC patients. 3, 4 neck lymphatic node groups's sampling made 90.1%. Neck lymphatic node metastases were revealed in 404 (42.0%) cases. Vocal cord paralyses rate decreased from 1.6% (before 1998) to 0.26%. Postoperative tempo-rary hypoparathyroidism rate (0.5%) did not change so as postoperative hemorrhage in thyroid bed (0.4%). There were no postoperative complications connected with CND during 2002-2007. TC relapses rate reduced from 1.4% to 0.5% after beginning of 6 lymphatic nodes group sampling in 1985 and up 0.27% - after regular CND since 1998.

Conclusion. Prophylactic and curative CND under visual RLN and PTG control allows to avoid injures of that structures and prevents necessity of reoperations in a tracheo-esophagel groove.

O-13-2 PROGNOSTIC IMPACT OF LYMPH NODE METASTASES IN INTRATHYROID PAPILLARY CARCINOMA IN 20 YEARS FOLLOW-UP

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Introduction: Incidence of lymph node metastases (LNM) in papillary thyroid carcinoma (PTC) is high and reaches 80%. Novel studies have shown their significant impact on disease free survival (DFS). Materials and methods: In a follow-up of 20 years we analyzed 153 patients with intrathyroid papillary carcinoma. We excluded those with capsular invasion and initial distant metastases. Total thyroidectomy (TT) was done in all patients. Central neck dissection (CND) and frozen-section examination of lower jugular LN was done in 117 and lateral neck dissection (LND) in 102 patients. Results: In a dissection group 80.3% of patients had LNM. According to tumor size: <1cm, >1<4cm and >4cm overall incidence of LNM was 62.1%, 86.7% and 66.7% respectively (p=NS). Incidence of LNM in with solitary vs. multifocal tumors was 43.5% vs. 29.8% (p=NS). Incidence of LNM in different histology subtypes of PTC: microcarcinoma, pure, follicular variant and poor differentiated, was 66.7%, 88.2%, 60% and 66.7% respectively ($p<0.05$). Relapse occurred in not dissected LN in 11.9%. Incidence of relapse in patients without LNM during first treatment was 17.4% compared to 10.6% in patients with primary LNM. Comparing these two groups, possibility of relapse (56.7% vs. 11.97%) and survival (91.1% vs. 90.5 %) were not significantly different.
Conclusion: Our results imply that LNM in intrathyroid papillary carcinoma are very frequent regardless to tumor size or multifocality, and almost equally distributed in both neck compartments. Total thyroidectomy, CND and selective LND is accurate approach to detect lateral LNM during first operation and improve DFS.

O-13-3 SENTINEL LYMPH NODE BIOPSY IN DIFFERETNTIATED THYROID CARCINOMA AND DECISION FOR SELECTIVE MODIFIED RADICAL NECK DISSECTION

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Background: The accuracy of sentinel lymph node biopsy (SLNb) in decisions for surgical management of lymph nodes in differentiated thyroid ccarcinoma (DTC) was demonstarted in a few previous studies. Aim: To determine wether SLN biopsy of first draining node/s in jugulo-carotid chain is accurate technique to select patients with true positive LN for selective Modified Radical Neck Dissection (MRND). Patients and methods: We have performed SLN biopsy in 156 patients with DTC. Before mobilization of the thyroid gland, 0.2 ml of methylen blue dye (1%) was injected peritumorally. After 10 minutes the dissection was continued around omohyoid muscle, towards the internal jugular vein and carotid artery until blue stained LN were found and sent for frozen-section examination. An extended dissection of level III and IV was done consecutively. All LN were examined by frozen section and conventional (HE) histopathology examination. If positive, MRND was performed after total thyroidectomy and routine dissection of central neck compartment. Results: Identification rate of SLN was 93.5%. Specificity and sensitivity of the method were 100% and 80% respectively. Negative and positive predictive values were 94.7% and 100%. Overall accuracy of the method was 95.6%. Conclusions: According to previous data, status of lower jugulo-carotid LN significantly predicts the status in upper two thirds. Our results imply that SLNb in the jugulo-carotid chain using methylene blue dye mapping, is feasible and accurate method for estimating LN status in the lateral neck compartment. The method may support a decision to perform selective MRND in patients with DTC.

O-13-4 VIDEO PRESENATATION OF SURGICAL TECHNIQUE OF SENTINEL LYMPH NODE BIOPSY IN DIFFERENTIATED THYROID CARCINOMA USING METHYLEN BLUE DYE

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Introduction:Few teams proposed sentinel lymph node (SLN) mapping as a possible more accurate method of lymph node staging in differentiatede thyroid cancer. We present surgical technique of SLN biopsy using Methylen blue dye as a tracer. Surgical precedure:We have performed SLNb in156 patients with DTC. After preparing myo-cutaneous flaps, strap muscles were separated laterally from the thyroid gland. Before mobilization of the thyroid, 0.2 ml of 1% methylene blue dye was injected peritumorally. Injection spot was coagulated to preserve leakage of dye. No structures were cut so far. After the lobe was stained and exposed, the dissection was continued towards internal jugular vein looking for the blue stained lymphatic vessels and lymph nodes in jugulo-carotid chain. Blue stained lymph nodes were removed as SLNs followed with extended dissection of surrounding non-SLNs above and beyond the omohyoid muscle. All dissected nodes were examined by frozen section and conventional histopathology examination. Total thyroidectomy with dissection of central neck compartment is routinely performed. At the time of dissection the majority of lymph nodes in the central neck compartment were blue stained, which also enabled easier differentiation from the parathyroid glands. Prior to total thyroidectomy, all parathyroid glands were preserved on venous-arterial stalks and both recurrent laryngeal nerves were identified and followed to the entrance into the larynx. All thyroid glands and lymph node specimens were sent to conventional histopathological examination. Results:The procedure is safe and accurate. The mean operative time was not significantly prolonged.

O-13-5 SUPERSELECTIVE FUNTIONAL NECK DISSECTION IN PAPPILARY CARCINOMA OF THYROID

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The standered treatment of Metastatic Pappilary Carcinoma of Thyroid is Total Tyhroidectomy with ipsilateral Funtional neck Dissection(MND TypeIII). Though we preserve 3 important structures of neck, IJV, Strnomastoid and Spinal accessary nerve, cutaneous nerves, Greated auricular nerve,supraclavicular nerves are cleared for want of nodal clearence.We all know that nodal metastasis in Pappillary Thyoid Carcinma is of no prognostic significance. hense it is possible to preserve above mentioned 3 important structure in neck.If nodal metastasis is of no prognostic value and we preseve the 3 vital structures why not preserve cutaneous nerves of neck, Greater auricular nerve and supraclavicular nerves.

I have observed in patients after FND, where Greater Auricular nerve removed, have disturbing anesthesia over ear lobule. little more patint and meticulous dissection while performing FND we will able to preseve extra few nerves like cutaneous nerves of neck, Greated auricular nerve and supraclavicular nerves leads presevation all the sensation of neck without compromising on Oncological clearence of nodes, and at the same time quality of life is also preserved.

I have done 2 cases of super selective neck disection in 2008 and 2009 where post operative qulaity of life much better than conventional FND.

conclussion;In Metastatic Pappillary Thyroid Carcinoma, Superselective neck dissection improves quality of life when compared to conventional FND without compromising oncological clearence. No of node retrival is equal in both type of surgery.

O-13-6 SIGNIFICANCE OF THYROGLOBULIN MEASUREMENT IN FINE-NEEDLE ASPIRATE AS A PREOPERATIVE DIAGNOSTIC TOOL FOR LATERAL NECK NODE METASTASIS IN PAPILLARY THYROID CANCER PATIENTS AT INITIAL DIAGNOSIS

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The aim of the study is to evaluate the usefulness of thyroglobulin(Tg) measurement in fine-needle aspirate(FNA) in determining the necessity of lateral neck dissection for initial surgical treatment of papillary thyroid cancer.

Total of 119 papillary thyroid cancer patients were prospectively studied from May, 2005 to Dec.2007. An ultrasound-guided FNA was done in 126 lateral neck node with suspection of metastasis at preoperative imaging study and FNA Tg was measured. All nodes were confirmed histologically .

Out of 126 nodes, 72 had been confirmed as metastasis of papillary carcinoma. FNA Tg of negative nodes were 1.9 ng/ml, and FNA Tg of metastatic nodes were 282.6 ng/ml. The sensitivity and the specificity of FNA were 61.1%/94.4%. With cutoff value as FNA Tg (10) ng/ml, the sensitivity and the specificity were 79.2%, 96.3%. With cutoff value as " FNA Tg/ the serum Tg ratio was higher than 1.0", the sensitivity and the specificity were 78.4%, 93.5%. The diganostic accuracy is highest when combine the result of FNA, FNA Tg (10), and FNA Tg/serum Tg ratio. Of 79 FNA negative cases, 5 inadequate cases and 6 reactive hyperplasia cases were diagnosed as metastatic node additionally using FNA Tg. In the cystic node metastasis, the sensitivity of FNA was 45.5%, but with combination of FNA Tg, the sensitivity was improved to 91%.

The measurement of Tg in the FNA improve diagnostic accuracy than FNA alone and helpful in determining the surgical extent of lateral neck dissection at initial diagnosis especially in controversial cases.

O-14-1 FOCUSED APPROACH PARATHYROIDECTOMY WITHOUT INTRAOPERATIVE PTH MONITORING IS A SAFE AND EFFECTIVE TREATMENT FOR PRIMARY HYPERPARATHYROIDISM

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Background:
Intraoperative PTH monitoring has been used in many centers as an adjunct to maximize the performance of minimally invasive parathyroidectomy, replacing the traditional bilateral neck exploration with four gland evaluation.
Without the use of intraoperative PTH monitoring, focused approach parathyroidectomy with confirmation of pathology by frozen section may provide the same result.
Methods:
A retrospective study in Division of Head and Neck Surgery, Department of Surgery at United Christian Hospital from January 2002 to June 2009 was carried out. Patients who had focused approach parathyroidectomy for primary hyperparathyroidism were recruited. Patients' demographics, preoperative localization data, intraoperative and postoperative details were evaluated. Patients are categorized into two groups regarding the use of intraoperative PTH monitoring. Outcome in terms of pathological and biochemical resolution were compared.
Result:
In our series, 82 patients with primary hyperparathyroidism underwent surgical intervention. 92.7% had focused approach parathyroidectomy performed. Intraoperative PTH monitoring was used in 4 patients (5.3 %). All of them had > 50% reduction in PTH 10mins after excision. 58 patients (76.3%) with frozen section performed confirmed abnormal parathyroid. Adenoma accounted for 98.7% of cases. In those patients without intraoperative PTH monitoring, 97.2% achieved successful biochemical response with normal serum calcium on follow up.
Conclusion:
Focused approach parathyroidectomy without intraoperative PTH monitoring is a safe and effective treatment for primary hyperparathyroidism. Intraoperative PTH may improve the clinical success rate in selected cases such as in re-operated cases or failed pre-operative localization.

O-14-2 ROLE OF 99MTC-SESTAMIBI SCANS IN THE LOCALIZATION OF PARATHYROIDS IN TERTIARY HYPERPARATHYROIDISM.

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Introduction: The objective of the study was to study different functional and anatomic features of the hyperplastic gland and clinical and biochemical characteristics of renal hyperparathyroidism (HPT) patients and their relationship with the scintigraphic detection of parathyroid glands.

Methods: A retrospective study between 2005 to 2008 was performed on patients with chronic renal failure (CRF) who underwent parathyroidectomy for HPT. Weight, histology, and localization of hyperplastic glands were recorded. Double-phase scintigraphy with technetium 99m-sestamibi was performed pre-operatively for these patients and the results were correlated with the location of the parathyroid glands during surgery and final histology. Serum parathyroid intact hormone (PTHi), creatinine, calcium, and phosphate levels were performed.

Results: There were 40 cases. 65% of the cases were predictive of the location of the parathyroid glands. Serum PTH did not correlate with the total parathyroid gland weight. It did not detect any supernumery parathyroid glands. It had a 80% sensitivity in locating a dominant hyperplastic parathyroid gland.

Conclusion: Double-phase 99mTc-sestamibi scintigraphy is of limited usefulness in patients with renal HPT. It may assist ensuring the dominant hyperplastic gland is removed during parathyroid surgery.

O-14-3 CHANGES IN POORLY MINERALIZED BONE AREA AFTER PARATHYROIDECTOMY FOR SECONDARY HYPERPARATHYROIDISM

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Purpose: Patients with renal failure characteristically show a great deal of poorly mineralized bone area which may be the cause of the high fracture rate in these patients. Acute mineralization at the osteocytes through the canaliculi after osteocyte death can be found after parathyroidectomy (PTX)(ASN 2009). Therefore, changes in the poorly mineralized bone area were investigated after PTX for secondary hyperparathyroidism.
Results: The bone volume-referent poorly mineralized bone volume in basic multicellular units (PM.BV/BVBMU) decreased from 25.9±17.1 to 4.0±5.1 % ($p = 0.004$) at 4 weeks after PTX. In the four patients in whom a biopsy was obtained at 1 year after PTX, the PM.BV/BVBMU values at 4 week/1year after PTX were 1.9/13.7, 0.7/7.1, 9.5/12.3 and 0.1/30.2 %, respectively.
Methods: Changes in the PM.BV/BVBMU was investigated in the iliac bone samples obtained before and at 4 weeks after PTX in 11 patients with secondary hyperparathyroidism. In four of the 11 patients, an additional bone biopsy was obtained at 1 year after PTX.
Conclusions: Poorly mineralized bone area was well mineralized early after PTX, due probably to the movement of mineral and fluid from the bone marrow to the osteocyte-canalicular system. However, it increased again, due probably to incomplete mineralization of osteoid tissue at the bone surface and lacunar wall produced between 4 week and 1 year after PTX. Maintenance of osteocyte function, the abrupt reduction of serum parathyroid hormone levels and supplementation of adequate calcium and phosphorus will be important to reduce the poorly mineralized bone area in these patients.

O-14-4 PARATHYROID FUNCTION AFTER TOTAL THYROIDECTOMY FOR DIFFERENTIATED THYROID CARCINOMA: 100 CONSECUTIVE CASES

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Background Hypoparathyroidism is one of the common complications after total thyroidectomy. Our surgical technique is in situ preservation of the superior parathyroid glands with their blood supply by using magnifying glasses for dissection. To prevent the occurrence of tetany due to inadequate blood supply resulting from surgical dissection, calcium gluconate is routinely added to drip infusion bottles and oral vitamin D and calcium are administered postoperatively to all patients. These medications are gradually tailed off depending on the serum Ca, P and PTH levels.
Methods A hundred consecutive cases with differentiated thyroid carcinoma who underwent total thyroidectomy from 2002 to 2008 were analyzed for this study.
Results Intact PTH decreased significantly on POD1($p<0.001$) and gradually reached normal range and stabilized to the preoperative levels in 3 months. Tetany was observed in 5% of the patients. Intact PTH was preserved in 97.8% of the patients after 6 months postoperatively.
Conclusions Our routine postoperative care prevented tetany in 95% of the patients. Our total thyroidectomy preserved parathyroid function after 3 months in 98% of the patients.

O-14-5 HYPOPARATHYROIDISM POST THYROID SURGERY: EXPERIENCE IN A NON SPECIALISED CENTER

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Objectives: Evaluate incidence of hypocalcemia after thyroidectomies in a hospital where there is no dedicated thyroid surgery expertise. Risk factors for hypoparathyroidism analyzed.

Design and Subjects: Retrospective analysis of Total and Completion thyroidectomies in 73 patients, over 2 years. Autotransplantation of the parathyroid gland was not practiced. Statistical analysis was performed using Fisher's exact test.

Setting: Tertiary hospital

Results: 73 subjects whom 58 had total and 15 underwent completion procedures. Incidence of transient hypocalcemia was 41.1% and permanent hypocalcemia conferred on 5 subjects (6.8%). No incidence of hypocalcemia in completion procedures. Surgery for malignant pathology proved to be a risk factor ($p < 0.05$) whilst routine identification and preservation of the glands in situ revealed no significance ($p > 0.05$).

Conclusion: Outcome is compatible with internationally accepted standards. General surgeons should refer difficult cases to endocrine centers and graft the parathyroid glands when necessary.