Oman Medical Specialty Board
Career and Research Forum 2018/2019: Abstracts

December 12, 2018

ANESTHESIA

The Stroke Related Tracheostomy Score as a Predictor for the Need for Tracheostomy in Stroke Patients

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ABSTRACT

Objectives: In stroke patients who need mechanical ventilation, it is common to do a tracheotomy for those who require long-term ventilation. The Stroke-Related Early Tracheostomy (SET) score is a trial to help these patients to benefit from earlier decision about doing tracheostomy and then to benefit from early weaning. This study aimed to assess the association between the SET score and the need for early tracheostomy. Also, to observe the stroke patients outcomes after early tracheostomy. *Methods*: This is a prospective cohort, monocentric study, which included 164 stroke patients who have been admitted in intensive care unit (ICU) at Khoula Hospital for mechanical ventilation from July 2016 to March 2017. All patients were assessed using SET score in the first 24 hours after admission to ICU, for the possibility of doing tracheostomy for the benefits of less airway dead space, less work of breathing, facilitated nursing care, and increased patient comfort. The decision of doing early tracheostomy in our study was dependent on the failure of application of our in-house weaning protocol for successful extubation. The timing of tracheostomy was decided according to the standard international data and our local hospital policy. We used standard statistical analysis methods using SPSS (IBM SPSS STATISTICS) system. P-values, T-values, and logistic regression models were used. Significance was calculated when the p-value is < O.050. *Results:* The total number of patients who had done tracheostomy were 113 out of 164 (69%). All over number of patients who had a SET score more than 8 were 64.6%, and less than 8 in 35.4%. The cut-off point for using the score was 8. Patients with a score of less than 8 were not candidates for tracheostomy, but those with a score value of 8 and above, were candidates for doing tracheostomy with specificity of 81.5% and sensitivity of 86.1%. *Conclusions:* SET score has been proved to be a good tool as a predictor of doing tracheostomy in stroke patients who have been ventilated for longtime.

DERMATOLOGY

Common Allergens Detected by Patch Test Among Allergic Contact Dermatitis Patients: A Retrospective Cross-sectional Study

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ABSTRACT

Objectives: To identify the common allergens detected by patch test among patients suspected to have allergic contact dermatitis. We also aimed to find out gender variation, common age group for this disease, and study the clinical correlation of detected common allergens with occupation, history of atopy, body site affected, gender, and age. *Methods*: A retrospective cross-sectional study done in Al-Nahda Hospital from January 2016 to December 2017. Omani, males and females aged 15–66 years old who were referred with an impression of allergic contact dermatitis were included in this study. Data were collected from medical records through hospital information system. Patients were classified according to age, sex, occupation, history of atopy, site involved, and detected allergens by patch test. EpiData version 3.1 was used for data entry and SPSS version 20 was used for data analysis. *Results:* A total number of 73 patients, 35.6% males and 64.4% females with diagnosis of allergic contact dermatitis were included in this study. The mean age of patients was 33.37 years ± 10.023 SD. A positive result for at least one substance was obtained in 72.6% of patients. The prevalence of allergy was highest for thiomersal (42.5%) and nickel sulfate (20.5%), followed by fragrance mix (15.1%) and CI+Me-Isothiazolinone (15.1%), p-phenylene diamine (13.2%), and potassium dichromate, balsam of Peru, and cobalt chloride (11.3% each). More than half of females (80.9%) and males (61.5%) were found to have positive results. Housewives and students

which fall under occupation category constituted the most common subgroups in this study, 31.0% and 25.0%, respectively. There were 50.9% out of 72.6% positive cases who had history of atopy. The most common sites involved were the hands (69.0%), followed by feet (12.0%). Chi-square tests applied on mentioned variables in relation to detected allergens found to be between 0.1 to 0.8. There was no statistically significant association between allergy and variables such as age, sex, occupation, site, and history of atopy ($p > 0.050$). *Conclusion:* By using Thin-Layer Rapid Use Epicutaneous Patch Test series in a population-based framework in Oman, we concluded that thiomersal was the commonest cause of allergic contact dermatitis followed by nickel sulfate. The common age group for this disease seemed to be wide, ranging from 15-66 years old. Prevalence of allergic contact dermatitis found to be more in females than males and hands were commonest site involved in this disease. Further collaborative studies are required to determine the standard allergen series specific to this area of the world.

Immune Mediated Skin Disorders and their Oral Manifestations in Omani Population: A Hospital Based Study

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ABSTRACT

Objectives: To determine the prevalence of immune mediated skin disorders, their oral manifestations, and the related comorbidity in Omani patients with immune mediated skin disorders attending the outpatient department of dermatology. *Methods*: We conducted a retrospective study of 236 newly diagnosed patients with immune-mediated skin disorders (IMD) who attended the outpatient department of dermatology and dental clinic in Al Nahda Hospital between September 2014 and September 2017. Data such as age, sex, investigations, diagnosis, comorbidity, and associated oral manifestations of the affected individuals were collected from the health information system. *Results:* Out of 236 cases of IMD, lichen planus (LP) (54%) was found to be the most common disease followed by epidermolysis bullosa (EB) and discoid lupus erythematosus (DLE) with equal prevalence of 10%, then systemic lupus erythematosus (SLE) 9%, erythema multiforme (EM) 7%, and toxic epidermal necrolysis (TEN) 2%. Interestingly, the most common autoimmune bullous diseases (ABD) is the pemphigus vulgaris (PV), which appeared to be less prevalent with 3% while there were 4% of bullous pemphigoid (BP), and 1% of pemphigus foliaceus (PF). In ABD and IMD with oral mucosal involvement, oral LP was the most common diseases with 78% of the cases followed by TEN 75%, PV 71%, and EM with 47%. The other diseases like DLE, EB acquisita, SLE, and BP showed relatively less oral involvement accounting to < 20%. The PF and pemphigoid gestation (PG) showed no oral manifestations. The most common comorbidity was seen in SLE (33%) followed by DLE (31%), EM (26%), BP (20%), and LP (12%). Alopecia areata and thyroid disorders were most commonly related to DLE and LP, respectively. *Conclusions:* Amongst all the diagnosed immune mediated disorders, LP had the highest prevalence. Interestingly, the otherwise most common ABD like PV and BP appeared to be less prevalent. The least prevalent were TENS, PF and PG in our retrospective study. The oral mucosal involvement was most observed in LP followed by EM and PV while the SLE and DLE showed more comorbidities. We recommend that all patients with IMD and ABD to be evaluated for oral mucosal lesions as our study showed the highly prevalent between them, which could affect the prognosis and management plan of these patients.

Retrospective Study on Clinical Effect of Fractional Carbon dioxide Laser in the Treatment of Post Burn Scar Among Patients in Sultan Qaboos University Hospital, Dermatology Clinic

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ABSTRACT

Objectives: The introduction of fractional carbon dioxide (CO_2) laser shows promising results in treating burn scars with fewer side effects. This study aims to analyze the efficacy of fractional CO_2 laser as a treatment for post-burn scars from patients' point of view and the degree of their satisfaction with this method. *Methods*: We performed a retrospective study of 26 patients (18 females and 8 males) who underwent fractional CO_2 laser procedures for treatment of burn scars at dermatology clinic of Sultan Qaboos University Hospital, from January 2017 to April 2018. Age, gender, skin type, age of burn scar, site of scar, number of laser sessions finished, and any complications occurred during or after the treatment sessions were recorded. Patients' scar were assessed using patient and observer scar assessment score for patient (POSAS-P). Six variants (before and after laser sessions) including pruritus, pain, color, pliability, thickness, and

relief were evaluated. Each scored numerically on a 10-step scale (maximal = 60). Patients were asked to give their overall opinion (i.e., degree of improvement after the laser was done, maximal = 10) compared to pre-laser treatment. A Wilcoxon signed-ranks test was used to compare pre- and post-laser treatment to assess the effectiveness of the laser. *Results:* A Wilcoxon signed-ranks test indicated that the median post-treatment POSAS-P scores 14.0 were statistically significantly lower than the median pre-treatment POSAS-P scores 35.5 (Z = 4.46, *p* < 0.001). The overall POSAS-P scale reported significant drop from a median of 9 to 3 (Z = -4.48, *p* < 0.001). Color of the scar showed best response compared to other variants. Among all patients treated, only three patients got scarring and two patients had transient edema post-laser treatment. *Conclusions:* Fractional CO_2 laser is an effective and safe method for treating burn scars with a significant change in scar appearance and symptoms according to patients' opinion.

ENT

The Role of Middle Ear Risk Index in the Outcome of Tympanoplasty in Patients with Chronic Mucosal Otitis Media

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ABSTRACT

Objectives: There are various surgical techniques developed to treat chronic otitis media, depending on the severity and stage of the disease. Tympanoplasty is the surgical procedure used for tympano-antral disease. The aim of successful tympanoplasty is to create a sound-conducting mechanism in a well-aerated, mucosal lined middle ear cleft. The reported incidence of surgical success of tympanoplasty ranges from 60% to 90% in adults. Middle ear risk index (MERI) has been developed and used to categorize the patients into low, moderate, and high risk to assess the prognosis of tympanoplasty. In this study, we aim to evaluate the validity and role of MERI in the outcome of tympanoplasty. *Methods*: This is a prospective cohort study conducted in Al Nahdha Hospital from March to December 2017. Thirty-nine patients aged 16−60 years old diagnosed with chronic suppurative otitis media and planned for tympanoplasty were included in our study. MERI was used to stratify them in groups. All patients were managed surgically by tympanoplasty. Success of tympanoplasty was assessed after three months post-operative by graft uptake rate, and improvement in hearing by comparison of pre-operative and post-operative pure tone audiometry with measurement of air-bone gap closure. Data was analyzed using SPSS version 20. One sample *t*-test was applied to compare the means. A *p*-value < 0.050 was considered significant. *Results:* Nineteen patients were in mild MERI group, 17 in middle group, and 3 in the severe group. The average pre-operative air-bone gap in mild and moderate groups were 25.16 dBHL and 30.24 dBHL, respectively. The average post-operative air-bone gap for both groups were 2.11 dBHL and 16.60 dBHL, respectively. Comparing mild and moderate groups, there was significant difference between pre- and post-operative air-bone gap with significant *p* = 0.002. *Conclusions:* MERI is a reliable tool to predict the success of tympanoplasty. However, further studies with larger sample size is needed to give more solid conclusion.

Comparison Study of the Effectiveness of Teflon and Titanium Stapes Prosthesis in Hearing Improvement in Patient Underwent Stapedectomy for Otosclerosis, our experience

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ABSTRACT

Objectives: Otosclerosis is a disease of the otic capsule. It is one of the common cause of progressive conductive hearing loss in a patient with age range 15−50 years. There is no definitive medical management for otosclerosis; however, surgical stapedectomy or stapedotomy may be effective in the improvement of hearing. Teflon and titanium prosthesis are the two commonly used prosthesis in our institution. The aim of this study is to compare the effectiveness of the two prosthesis in hearing improvement by comparing the effectiveness in closing the air-bone gap in patient underwent stapedectomy for otosclerosis. *Methods*: We conducted a retrospective cohort study of stapedectomy patients in Al Nahdha Hospital. Medical records of all patients underwent stapedectomy done by two surgeons from 2010 to 2015 were reviewed. Patients underwent stapedectomy for reasons other than otosclerosis and revision cases were excluded from the study. Sixty nine patients who met the inclusion criteria were grouped according to the type of prosthesis used, and the hearing outcome were compared. Measured outcome were four frequency air-bone gap closure and pure tone threshold. *Results:* The study group comprised of 50 titanium and 19 Teflon wire prosthesis. Reduction of the air-bone gap was achieved significantly in both groups, with titanium prosthesis showed more reduction in all period post-operative. However, it was statically significant at six months post-surgery with *p* = 0.046. There was no statically significance difference in age, gender, and site of operated ear. No major post-surgery complication noticed

from each group. *Conclusions:* Both prosthesis provided comparable results, although titanium prosthesis was slightly superior at six months duration post-surgery. The small number of teflon group may confound this result. Large number of patients needed to confirm these result.

FAMILY MEDICINE

Incidence of School-related Injuries Among Students in A'Dakhiliyah Governorate Schools, Oman

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ABSTRACT

Objectives: Injuries are among the most significant causes of mortality and morbidity as estimated by World Health Organizations (WHO) during childhood period. Estimating the incidence of school related injuries in A'Dakhiliyah governorate schools was the main objectives of this study as well as addressing the common mechanism, risk factors, and school environment contributed to injuries. *Methods*: This is a prospective cohort study involving all students in A'Dakhiliyah governorate schools during academic year 2015−2016. Data was collected using a questionnaire which was filled by the school nurse or social workers at school health units. *Results:* The incidence of school-related injuries was 2.28%. The majority of injured students were in grade 1−4 (63.7%) and were boys (72.5%). Improper school equipment/furniture accounted as a risk for 25% of injuries. The three most common mechanisms causing injury were falling (36%, n = 587), collision with an object (22%, n = 360), and collision with a person (14%, n = 219). Asphalt (21%, n = 295) and concrete (14.3%, n = 201) were the most common surface in school environment contributed to injuries. *Conclusion:* School related injuries is not uncommon and can be prevented by improving the infrastructure of schools buildings and supplying appropriate school stationary equipment for age. Results of this study are useful to develop a national injury prevention program aimed enhancing the safety in school environment.

The Prevalence of Hepatitis B Virus Infection among Pregnant Women in Oman

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ABSTRACT

Objectives: Hepatitis B virus (HBV) infection remains a major health problem worldwide with significant morbidity and mortality despite implementation of effective vaccination programs. Worldwide, vertical transmission is responsible for approximately one-half of chronic HBV infection. This study aims to determine the prevalence of HBV seropositivity and the relationship between hepatitis B surface antigen (HBsAg) positivity and maternal age and neonatal outcomes. *Methods*: A retrospective cross-sectional study was conducted in antenatal clinic (ANC) of FAMCO department in Sultan Qaboos University Hospital from January 2015 to December 2017. Eligible patients were selected randomly from a registry book available in the ANC clinic. Data was collected from the electronic patient's records and analyzed using SPSS version 22. *Results:* Out of 234 randomly selected pregnant women, eight cases tested positive for HBsAg with a prevalence of 3.4 % (95 % confidence interval (CI): 1.1%-5.7%). There were no statistically significant association between HBsAg with age, gestational age at the time of delivery, and mode of delivery ($p > 0.050$). *Conclusions:* Prevalence of HBsAg among pregnant Omani women was 3.4%, thus routine screening of all pregnant women for hepatitis B infection is recommended in all Ministry of Health institutes.

GENERAL SURGERY

Impact of Bariatric Surgery on Infertility and Menstrual Irregularities, One Center Experience

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ABSTRACT

Objectives: This study aimed to identify pregnancy rate post bariatric surgery, percentage of women who have resumption of menstrual regularities, and average weight loss at the time of pregnancy. *Methods*: This is a retrospective analysis from a prospective database including all female patients who had bariatric surgery at the Royal Hospital between September 2012 and December 2017. The data was entered in epidata software.

Then descriptive analysis was applied to get the results in SPSS. *Results:* Out of all females operated with sleeve gastrectomy, there were 47 females with infertility and menstrual irregularities. There were only 15 referrals from the gynaecology department, the rest of them presented primarily to surgery department for bariatric surgery. Twenty-seven (57.4%) of the females had actual infertility of whom 16 (59.3%) subsequently became pregnant and conceived. On the other hand, 38 (80.1%) had a history of a specific gynaecological problem (polycystic ovarian disease (PCOD) with irregular cycles. Of these, 31 (81.6%) had a return of regularity and improvement of other parameters in their PCOD. Average weight loss observed at the time of pregnancy is 35 kg. The average time to get pregnant after bariatric surgery is 10.7 months. Other indicators of this progress in relation to the weight change were also studied including hormonal levels and overall health. *Conclusions:* The background of obesity in females in Oman lends itself to the huge burden carried by both patients and health providers in relation to women's health in general, be it gynaecological or obstetric. These early results are consistent with other international studies that support the role of bariatric surgery in offering a solution to these patients while they are in their reproductive life.

Surgical Management of Gastric Cancer. Where do we stand? The Royal Hospital Experience

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ABSTRACT

Objectives: Gastric cancer (GC) is the second leading cause of cancer death worldwide. Oman has the highest GC incidence in the Arab World. The age standardised incidence is 12/100000 in males and 5.8/100000 in females. The aim of this study was to aanalyze the presentation patterns to the biggest centre in Oman, to evaluate the role of Surgery (especially Laparoscopy) in management and to assess the survival rate and the factors impacting it. *Methods:* Retrospective cohort analysis, conducted at the Royal Hospital in Muscat of patients admitted with diagnosis of Gastric cancer between 2006 to 2016. Descriptive statistics used the Chi-square while Kaplan-Meier curves and differences in survival in different classes were tested using the log-rank test. Analysis used SPSS 20. *Results:* There were 408 patients with the diagnosis of GC. Of these, 260 (64%) had surgery. A sub-analysis included 90(35%) patients who had Laparoscopic surgery after 2010. Of these 63(70%) had gastric resections while 27(30%) were palliative. Patients mainly came from coastal areas (63%). H. Pylori was found in 67%. The disease presented late (Advanced stages (III-IV) in 68% of the cases. In the Laparoscopy group, the overall 5 year survival for Early (Stage I,II) cases was seen in 88% while those with advanced stages, survival was in 33%. The mean node harvest was 18(+/-13). Among those who had gastric resections, R0 was noted in 83%. Both negative margin status and total number of harvested lymph nodes had a significant ($p<0.001$) impact on survival rate. Similarly, stage of cancer at diagnosis as well as family history were two independent factors for the occurrence of death when comparing surgical versus non-surgical cases ($p< 0.002$). *Conclusions:* Gastric cancer remains a priority health challenge in Oman. This is the first detailed study on the impact of surgery in GC in the country. Overall survival rate for GC showed superiority among the surgical group based on cancer stages, which is similar to International standards.The disease presents late in the majority of patients, hence limiting the desired impact of Surgery which could otherwise offer a better stage for stage survival. Future studies should analyze the risk among different groups (Family History, HP positive), to determine those who need screening.

HISTOPATHOLOGY

PD-L1 Expression in Bladder Cancer and Correlation with Tumor Grade, Stage and Outcome

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ABSTRACT

Objectives: The aim of this study was to evaluate the expression of programmed death-ligand (PD-L1) in bladder cancer cases using immunohistochemistry, and to determine whether an association exists between the level of expression and tumor grade, stage, and outcome. This study also looked at the available clinicopathological features of bladder cancer among Omanis. *Methods:* This was a retrospective cohort study of patients using archived samples that was subjected to prospective analysis. All patients diagnosed and treated for bladder cancer in Sultan Qaboos University Hospital (SQUH) from January 2006 to December 2017 and followed-up for at least one year were included. Clinical information including age, sex, any risk factors, and stage at diagnosis were obtained from the medical records. PD-L1 testing using immunohistochemistry was performed on formalin

fixed paraffin embedded tissue blocks. Scoring of PD-L1 expression by tumor cells was done independently by two pathologists. Positivity was defined using two different cut-off values (≥ 5% and ≥ 25%) of tumor cells showing membrane or cytoplasmic staining. Outcome was divided into two categories either no recurrence at last follow-up or recurrence/disease progression/death. *Results:* There was a total of 68 cases, 72.1% were males and 27.9% were females with an age range of 35 to 89 years (mean = 65.32 and median = 66). Majority were diagnosed with pT2 stage disease (38.8%) followed by pT1 stage disease (32.8%). Hematuria was the most common presentation (58.7%). Invasive urothelial carcinoma appeared in 79.4% of patients and 83.8% were of high grade. PD-L1 testing were performed on 63 cases, five were excluded due to non-availability of tissue blocks. PD-L1 was positive in 44% of cases using cut-off value of 5%, however it dropped to 30% using the cut-off value of 25%. Using a cut-off value of 5%, it was significantly associated with tumor grade ($p = 0.033$), but this was not significant using cut-off value of 25% ($p = 0.250$). No statistically significant association was found between PD-L1 expression and outcome using both cut-off values ($p = 1.000$ for both) and stage at diagnosis ($p = 0.798$ and $p = 0.102$). *Conclusion:* This study showed that at a cut-off value of ≥ 5%, 44% of cases of bladder cancer were PD-L1 positive. There was a significant association between PD-L1 expression in bladder cancer and tumor grade. On the other hand, no statistically significant association was found between tumor stage and outcome. These results indicate potential benefit for patients of high tumor grade with anti-PD-L1 immunotherapy. In addition, this study highlights the clinicopathological features of bladder cancer among Omani patients and shows comparable results to such data worldwide. Expanding the sample size by including other health institutions in Oman will add more strength to this study.

Clinicopathological Pattern of Salivary Gland Neoplasms among Omanis: A Single Institute Experience with a Focus on the Histologic Spectrum and Radiological Findings

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ABSTRACT

Objectives: The study aimed to assess the trend and clinicopathological patterns of salivary gland tumors among Omani population. The secondary objective is to evaluate the anatomical distribution and radiological characteristics of salivary glands tumors. *Methods*: This is a retrospective, cross-sectional study including all cases of salivary gland neoplasms (benign and malignant) diagnosed in Armed Forces Hospital (AFH) from January 2008 to December 2017. Both diagnostic modalities, the fine needle aspiration cytology or histological biopsy were considered in the study. Cases of non-Omani patients were excluded. The data were analyzed using SPSS version 19. The categorized variables were described as percentage and continuous variables were presented as mean with standard deviation. *Results:* This study included 54 cases, 46.3% males and 53.7% females. The most frequently affected gland is the parotid gland (61.1%) followed by the submandibular gland with 22.2%. Of the 54 cases, 77.8% were benign neoplasm and 22.2% were malignant neoplasm. Among the benign group, the most common neoplasm is pleomorphic adenoma accounting for 81.0% of cases. Mucoepidermoid carcinoma is the most frequent malignant neoplasm, comprising 58.3% of cases. *Conclusions:* The present study was a single institutional experience where analysis of 54 salivary gland tumors was carried out and concluded that salivary gland tumors are uncommon neoplasms that usually arise in the parotid gland showing some predilection for females. Benign tumors are more common than malignant tumors. Pleomorphic adenoma and mucoepidermoid carcinoma were the most common benign and malignant tumors reported in this series, respectively.

MICROBIOLOGY

Rate of Primary Ventriculoperitoneal Shunt Infection in Tertiary Neurosurgical Center in Oman: A Cohort study

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ABSTRACT

Objectives: To determine the frequency of primary ventriculoperitoneal (VP) shunt infection, causative organisms, underlying risk factors, and outcome in patients who had been operated. *Methods*: This is a retrospective cohort review of all patients who developed primary VP shunt infection. This study was conducted from January 2010 to December 2016 in neurosurgical center at Khoula Hospital, a tertiary hospital in Oman. The primary outcome was shunt infection defined as positive cerebrospinal fluid culture that was associated with compatible symptoms and signs of central nervous system infection or shunt malfunction, surgical incision site infection requiring shunt reinsertion and intraperitoneal pseudocyst formation. Several risk factors were examined to look at their association with shunt

infection. Data was collected in Epi-Data sheet which was created with the help of EpiData Manager Program. Analysis was done using IMB SPSS statistics 25.0. *Results:* A primary VP shunt was inserted in 307 patients during the study period with 2.53 years mean duration of follow-up. Out of 307 patients, 44 developed primary VP shunt infection with a rate of 14.3% with male to female ratio of 1:1. There were 50% infection cases developed in patients aged less than one month. Among the infected cases, hydrocephalus due to benign tumors was the commonest indication (36.4%) followed by myelomeningocele (32%) and intraventricular hemorrhage (11.4%). Other patients (59%) developed infection within three months post operation. There was no significant association among the factors examined and VP shunt infection. Coagulase negative staphylococcus was the commonest cause (38%) followed by Staphylococcus aureus (9%), gram negative (18%), and polymicrobial gram-negative (16%). Multidrug resistance organisms account for a total of eight isolates in which ESBL is the commonest. Modalities of treatment varied (50%) were treated with one stage revision using external ventricular drainage which complicated by EVD related infection in 50%. The crude mortality was calculated as 18% with attributable mortality of 4.5%. *Conclusions:* The rate of primary shunt infection in Khoula Hospital is within the international benchmark for this type of surgery. We described a high rate of MDRO causing VP infection, this should trigger strict adherence to infection control practices in such high-risk surgery.

Effect of Different Genotypes of Carbapenemase Producing Enterobacteriaceae on Clinical Outcome of Infections at Sultan Qaboos University Hospital: A Retrospective Study

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ABSTRACT

Objectives: To determine the proportion of different genotypes of carbapenemase-producing Enterobacteriaceae (CPE) and to assess the impact of genotype on the outcomes. In addition, we sought to examine the effects of different treatment approaches on mortality for the different genotypes. *Methods*: This retrospective cross-sectional study of clinical samples were processed in clinical microbiology laboratory at Sultan Qaboos University Hospital (SQUH). Samples were obtained from patients attended care at SQUH between September 2016 and April 2018, containing CPE by phenotypic method and was tested using Xpert® Carba-R. Retrospectively, the medical records of the patients were reviewed for demographic, microbiological, and clinical information. Variables include gender, age, factors influencing acquisition of the CPE, co-morbidity, type of infection, management approach, and 30 day-mortality outcome. Univariate and multivariate regression analysis were performed using SPSS software 22.0. *Results:* CPE were detected in 59 isolates. Of the 59 CPE isolates included in the study, 38 had OXA-48 gene, 12 isolates produce NDM, eight isolates produce NDM and OXA-48, and one isolate produces VIM. By subgroup analysis of isolates producing OXA-48 and NDM, the univariate regression analysis showed that there is statistically significant decrease in mortality in NDM group in comparison with OXA-48 (odds ratio (OR) =0.188;95% confidence interval (CI):0.045-0.782);*p* =0.020). Multivariate analysis showed NDM has 88.3% less risk of mortality compared with OXA-48. *Conclusions:* Subgroup analysis showed that genotype is an independent risk factor for mortality. Further studies with larger sample size maybe conducted in the future to verify this association.

OBSTETRICS AND GYNECOLOGY

Fertility-Sparing Treatment in Young Women with Atypical Endometrial Hyperplasia and Low-Grade Endometrial Cancer: A Tertiary Center Experience

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ABSTRACT

Objectives: To evaluate the oncologic and reproductive outcomes of patients with atypical endometrial hyperplasia and low grade stage 1 endometrial cancer who received medical treatment. *Methods*: A retrospective study was conducted on all patients aged 20-42 years with complex, atypical endometrial hyperplasia, and low grade endometrial cancer stage 1, who wished to preserve fertility and were treated at Royal Hospital. This study was conducted between January 2006 and December 2016. Patients had received oral megestrol acetate with or without levonorgestrel intrauterine system. Response to progestin treatment was assessed in terms of duration of therapy, time to response, pregnancy, time of surgery, and oncological outcome. Statistical analysis was performed

using SPSS 20.0 software. *Results:* Twenty patients met the inclusion criteria and among them, 90% had complete remission. Among 90%, 55% had complete remission within six months of treatment. Recurrence rate was recorded in 11 patients (55%) and it was more frequent in obese patients with body mass index (BMI) of ≥ 30 ($p = 0.001$), and who had complete response in > 6 months of hormonal treatment. About 15% of patients required hysterectomy and 12 (60%) patients conceived after full treatment. *Conclusions:* Fertility-sparing treatment of atypical endometrial hyperplasia and grade 1 stage 1 endometrial cancer in reproductive-age women is feasible. However, obese patients (BMI ≥ 30) has a high recurrence rate.

Prevalence of Respiratory Distress Syndrome (RDS) in Neonates Delivered by Elective Cesarean at Term Gestation with and without Corticosteroids in Sultan Qaboos University Hospital

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ABSTRACT

Objectives: To estimate the prevalence of respiratory distress syndrome (RDS) in neonates delivered by elective cesarean at term gestation with and without corticosteroids cover. In addition, we aim to determine other neonatal complications such as sepsis, hypoglycemia, and hyperbilirubinemia. *Methods*: This was a retrospective, descriptive study conducted on Omani women who were delivered by elective cesarean section in Sultan Qaboos University Hospital at gestational age from 37 to 39±6 weeks between January 2010 and December 2015. *Results:* Among 754 patients included in the study, 18.9% received steroids antenatal and 81.1% did not receive the same medication. RDS was found in 17 newborns, making the prevalence of RDS 2.3%. All of the 17 babies required a neonatal intensive care unit admission and ventilator support. The most common ventilator support used was continuous positive airway pressure (60%). Giving corticosteroids antenatal did not change the respiratory morbidity as measured by RDS in the newborns ($p = 0.341$). Higher gravidity and parity, gestation of less than 38 weeks, babies with birth weight less than 3 kg were associated with significant risk of RDS. Type of the anesthesia and amniotic fluid index during third trimester did not appear to change the respiratory morbidity in the newborns. The most common secondary complications in newborns diagnosed with RDS was transient tachycardia, followed by hyperbilirubinemia, and hypoglycemia. *Conclusions:* During this study period, the prevalence of RDS was found to be low. Giving corticosteroids antenataly for patients with planned elective cesarean sections at gestational age of 37 to 39±6 weeks, did not seem to have beneficial effect with respect to neonatal respiratory morbidity.

Gestational Trophoblastic Disease Incidence and Management at Tertiary Centre, Oman

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ABSTRACT

Objectives: To estimate the incidence of all types of gestational trophoblastic disease in Oman at a tertiary center and the experience of its management over an eleven year period. This study has also looked at the reproductive outcome after trophoblastic disease treatment. *Methods*: This retrospective, descriptive study was conducted at a tertiary center (the Royal Hospital), from January 2007 to December 2017. All cases with a histopathological report of hydatidiform disease were included. Cases were diagnosed either through histological examination or by using biochemical and radiological results. This study addressed the demographic characteristics, clinical presentation, and physical signs. We also studied the management, treatment, and follow-up including reproductive outcome and recurrence rate. *Results:* A total of 236 women with gestational trophoblastic disease were included in the study. The mean maternal age was 35 years, the mean gravidity was five, and the parity was three. The most common risk factors were advanced maternal age and multiparty. The most common symptom was abnormal vaginal bleeding (51.4%) with no other associated symptoms. Thyrotoxicosis, preeclampsia, and anemia were rare among the studied cases (3.8%, 7.2%, and 0.8%, respectively). The mean gestational age was 10.57±3.2. Complete mole constituted 35.1% of cases, partial mole 61.0%, choriocarcinoma 0.42%, placental site 0.42%, and invasive mole 1.27%. Negative beta human chorionic gonadotropin was achieved in 67.2±2.741 days in 145 patients. However, 59 cases missed the follow-up. Persistent disease was observed in 12.3%, while 10.6% progressed to neoplasia. About 5% of cases required chemotherapy. Metastasis was reported in 4.7% of the cases, of which 81.8% were lung metastasis. About 38.0% conceived later and live births were 25.4%. *Conclusions:* This study highlights the importance of

proper assessment and follow-up of histopathology diagnosis. Gestational trophoblastic disease usually has a good prognosis and reproductive outcome if properly followed-up and treated.

OPHTHALMOLOGY

Intravitreal Ranibizumab (Lucentis®) in the Treatment of Non-leaking Macular Cysts in Retinal Dystrophies

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ABSTRACT

Objectives: To assess the effectiveness and safety of intravitreal ranibizumab (IVR) injection in the treatment of non-leaking macular cysts in patients with retinal dystrophy. *Methods*: This is a prospective cohort followed by non-controlled non-randomized non-blinded qausi-experimental trial, conducted on patients older than 17 years, diagnosed with retinal dystrophy and non-leaking macular cysts between January 2015 and July 2018 in one center (Sultan Qaboos University Hospital). Patients with best corrected visual acuity (BCVA) ≤ 0.5 received carbonic anhydrase inhibitors (CAI) (oral acetazolamide 500 mg/day or topical brinzolamide twice daily) and followed-up for three months. Patients who did not show an adequate response with CAI, invited to participate to receive three 0.5 mg IVR injections at monthly intervals. There were a significant reduction (> 10%) of the central macular thickness (CMT) and improvement (> 1 line) in BCVA. Presence of any complication was noted. The mean reduction in CMT with IVR treatment was analyzed using Wilcoxon signed ranks test based on positive ranks. Correlation between BCVA and CMT was assessed using Pearson correlation coefficient. The study was approved by the institutional research and ethics committee. *Results:* Twenty-one eyes of 13 patients with retinal dystrophy (eight males and five females) with a mean age of 23 years ±5 (SD) were recruited. Nine eyes of seven patients with BCVA ≤ 0.5 received CAI. Three eyes of two patients (33%) showed a positive response to the treatment. A mean reduction of 19% in the CMT compared to pretreatment levels was observed. Six eyes of five patients with BCVA ≤ 0.5 who did not respond to CAI treatment received IVR injections. All eyes (100%) showed a positive response to the treatment. A mean reduction of 42% in the CMT was observed compared with pretreatment values ($p < 0.050$). One patient showed improvement in BCVA by 2-4 lines in both eyes whereas no change was seen in others. A moderate negative correlation was found between BCVA and change in CMT ($r = 0.432$; $p = 0.467$). Four patients (57%) showed intolerance to oral CAI. No ocular or systemic complication was noted following IVR injections. *Conclusions:* Patients with retinal dystrophy and non-leaking macular cysts who do not respond to CAI treatment showed a significant reduction in CMT following IVR injections. A corresponding visual benefit was observed, but this was not statistically significant. No complications from IVR were observed. Further studies with more patients and longer follow-up are warranted to ascertain the efficacy and safety of this treatment modality.

Ocular Effects of Intravitreal Anti-vascular Endothelial Growth Factor (Ranibizumab) for Retinopathy of Prematurity Attending Tertiary Hospital in Oman: Cross-sectional Study

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ABSTRACT

Objectives: To study the ocular outcomes of ranibizumab in patients with retinopathy of prematurity (ROP). *Methods*: The study is a retrospective cross-sectional study conducted in Al-Nahdha Hospital, a tertiary hospital, from January 2014 to May 2016. All premature children with the diagnosis of ROP who received intravitreal anti-vascular endothelial growth factor (lucentis) for ROP were included in the study. Eighty-three preterm babies were involved in the study as they met the inclusion criteria. Patients with leukocoria or with congenital eye anomaly were excluded. Out of 83 patients, six needed repeated intravitreal anti-VEGF. Demographic data were collected including date of birth, gender, birth weight, birth history, neonatal history (oxygen exposure), and type of ROP. The data was collected by reviewing patients' files in the hospital information system (Al-Shifa). All the diagnoses of ROP were collected. EpiData software was used to enter the data. *Results:* A total of 166 eyes were included in the study. Out of 166 eyes, 24.1% had zone 1, 73.5% had zone 2, and 2.4% had zone 3 of ROP. From 166 eyes, 7.8% had stage II, 82.5% had stage III, and 1.2% had stage IVA of ROP. It was found that 97.6% eyes had plus disease. On six months follow-up, all patients had complete vascularization of the retina except for 9.6% patients. None of the patients had cataract, 3.6% patients had strabismus, 6% had myopia, 1.2% had amblyopia, and 1.2% had retinal detachment. After one year, only 2.4% patients had incomplete vascularization. 1.2% patient had cataract, 8.4% had strabismus, 7.2% had myopia, 1.2% had amblyopia, and 1.2% had retinal detachment. *Conclusions:* Few cases from the study were found to have ocular side effects. Ranibizumab intravitreal injection seems to be clinically effective in treating patients with ROP.

ORTHOPEDICS

Prevalence of Burnout in Residents in Oman Medical Specialty Board: A Cross-sectional Analytical Study

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ABSTRACT

Objectives: To study the prevalence of burnout among residents of Oman Medical Specialty Board (OMSB). *Methods*: This is a cross-sectional study. All residents involved in various training programs in the OMSB where invited to answer a validated questionnaire (Maslach Burnout Inventory) from February 2018 to April 2018. The data was analyzed using SPSS version 25.0. *Results:* A total of 343 residents were involved in the study with response rate of 61.8%. Residents with high-burnout status were 57 (16.6%) and the majority were females (63.2%). Burnout among surgical, medical, and diagnostic specialties were 13.9%, 19.0%, and 12.8%, respectively. Emergency residents have the highest percent of burnout symptoms among medical specialties with 46.2%, and Ophthalmology residents have highest percent of burnout symptoms among surgical specialties with 22.2%, and Hematology residents have highest percent of burnout symptoms among diagnostic specialties with 25.0%. *Conclusions:* Burnout in the OMSB was found to be lower than that found in most international studies, and was found to be highest among emergency residents.

The Perception of Oman Medical Specialty Board Orthopedic Resident Procedure Self-Evaluation Comparing with Supervisor Scoring Using O-SCORE

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ABSTRACT

Objectives: To compare the resident's self-evaluation with supervisor's evaluation using the Ottawa Surgical Competency Operating Room Evaluation (O-SCORE) tool among orthopedic residents at different residency levels in the Oman Medical Specialty Board (OMSB). *Methods*: This is a cross-sectional study in Armed Forces Hospital, Khoula Hospital, and Sultan Qaboos University Hospital between April 2018 and December 2018. The O-SCORE tool was distributed to orthopedic residents to evaluate themselves, and to the supervisors to evaluate the residents after each operation. All evaluation forms were collected from all three hospitals and were analyzed using Epi-data and SPSS program. *Results:* A total of 107 evaluation forms were collected and most of residents obtained a grade of 4-5 in all aspects of O-SCORE. There is an excellent correlation between resident self-evaluation and supervisor evaluation with correlation coefficient of 0.947. *Conclusions:* There is no difference between resident self-evaluation and supervisor evaluation for same operation. However, this evaluation tool can be implemented to be used in orthopedics and other OMSB surgical programs for resident's self-evaluation or/and supervisor's evaluation of the resident.

PEDIATRICS

Incorporation of Evidence Based Guidelines on Bleeding Risk Assessment Prior to ENT Surgery into Practice: Real Time Experience

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ABSTRACT

Objectives: This study aimed to measure unbiased estimate of hemostatic outcomes in ENT surgeries in relation to coagulation testing. *Methods*: All patients who underwent ENT surgeries from three tertiary hospitals during the period from 1 July 2016 to 1 January 2017 were enrolled in the study. The retrieved data included gender, age, type of surgery, results of coagulation blood tests (if done), other laboratory test results (complete blood count, biochemical profile, etc), postoperative bleeds, how it was managed, need for blood transfusion and whether the patient required another surgery to stop the bleeding or not. Patients with known bleeding history

or previous coagulation derangement were excluded from the study. The primary outcome was post-operative bleeding. *Results:* The study included data from 730 patients who underwent ENT surgical procedures. They were 432 males and 298 females. Their mean age was 19.6±16.92 year. Out of the 730 patients, 372 patients were interviewed for a challenging bleeding history alone (group 1) and 358 were interviewed plus a pre-operative coagulation profile check (Group 2). Total of fourteen patients (1.9%) developed postoperative bleeding. None of them was due to abnormal bleeding tendency and they didn't require any hemostatic support. Six of them bled early (primary hemorrhage) while at the hospital due to surgical reasons (surgical site bleed that required suturing). Eight patient had delayed postoperative bleeds, after being discharged (due to eating hard food/Trauma). Only total of four patients had major bleeds, requiring surgical intervention. *Conclusions:* Despite guidelines recommending not doing coagulation testing prior to surgeries, many local surgeons still consider preoperative coagulation testing as a standard practice to evaluate the patients bleeding risk prior to any surgical procedure. This has resulted in unnecessary delays in surgeries (reaching up to a year in many patients) besides the parents/patients anxiety and additional cost. We recommend awareness campaigns for surgeons and adhering to guidelines of taking detailed hemostatic history.

Pattern of Viral Infection in Acute Asthma Exacerbation and Association with the Severity of the Episode

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ABSTRACT

Objectives: To identify the prevalence of certain viruses in asthmatic children during acute asthma exacerbation, and to identify any correlation between certain virus and severity of the episode. *Methods*: A retrospective cross-sectional study was carried out including all children aged two to 12 years who were admitted in Royal Hospital between January 2015 and October 2017 with acute exacerbation of asthma and who had nasal swab. Nasal swabs were collected to detect any of the 18 viruses including rhinovirus, boca virus, respiratory syncytial virus RSV, adenovirus respiratory, human metapneumovirus, coronavirus OC43, parainfluenza 1, parainfluenza 4, influenza, coronavirus 229E, coronavirus HKU1, parainfluenza 2, parainfluenza 3, influenza A (H1N1), influenza A, coronavirus NL63, influenza B, and parechovirus. *Results:* Among the 108 enrolled patients, viral infections were detected in 82 patients (75.9%). Rhinovirus is the most frequently detected virus (41.0%), followed by adenoviruses (13.0%), RSV (11.0%), bocavirus (7.0%), and human metapneumovirus (6.0%). According to severity of asthma, viruses were detected in 6.1% of mild cases, 61.0% of moderate, and 32.9 % of severe cases. No association between asthma severity and presence of virus ($p = 0.062$) was detected. There was no significant difference in severe asthma exacerbation with or without viral infection (32.9% vs. 53.8%) ($p = 0.055$). Among the viral-positive patients, adenovirus has significant association with asthma severity ($p = 0.021$). In our study, age, respiratory rate, and oxygen saturation were significantly different between viral positive and viral negative groups (*p*-values were 0.0001, 0.036, and 0.010, respectively). *Conclusions:* Respiratory viruses were identified in most of patients with acute asthma exacerbation. Rhinovirus is the most frequently detected virus, but adenovirus has significant association with asthma severity.

Outcome of Late Onset Sepsis among Newborns at a Tertiary Hospital in Oman

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ABSTRACT

Objectives: To determine the incidence, the pattern of causative organisms, and mortality among newborns with culture proven late onset sepsis (LOS) and to determine the risk factors linked to late onset gram-positive sepsis and late onset gram-negative sepsis in Sultan Qaboos University Hospital (SQUH). *Methods*: This is an 8-year retrospective study conducted between January 2007 and December 2014 at SQUH neonatal intensive care unit (NCIU). Inborn and out born infants with positive blood cultures were included in the study. Data were analyzed using STATA 12. Multivariate logistic regression analysis for all risk factors was completed to detect the relationship between risk factors. *Results:* The total of 125 babies identified with late onset sepsis of whom 55.2% were gram positive, 41.6% were gram negative, and 3.2% were due to candida species. The overall incidence among inborn admissions in the center was 4.30/1000. Most of infections occurred in the very low birth weight infants (64.0%). Eleven (8.8%) babies died due to gram-negative sepsis. *Klebsiella pneumoniae* followed by *pseudomonas aeruginosa* were the leading cause of death. Maternal intrapartum antibiotics were the only independent risk

factor correlating more with gram-negative organisms compared to gram positives in the multivariate analysis ($p = 0.003$). **Conclusions:** LOS poses a burden in the NICU, which could be due to the increasing care of premature babies. *Klebsiella pneumoniae* is the major cause of mortality in LOS. The use of intrapartum antibiotic prophylaxis in mothers might explain the positive correlation of maternal antibiotics as a risk factor with gram-negative infections.

PSYCHIATRY

Trait Emotional Intelligence and its Correlates among Oman Medical Specialty Board Residents

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ABSTRACT

Objectives: To describe the trait emotional intelligence (EI) among Oman Medical Specialty Board (OMSB) residents across multiple specialties and to correlate it with their socio-demographic backgrounds. **Methods**: This was a cross-sectional study conducted between February and August 2017. The participants were OMSB residents, who were administered the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF). Their socio-demographic details were also ascertained. Multiple linear regression analysis was conducted to identify the independent predictors of trait EI. **Results:** The present cohort endorsed high score in the subscale of 'well-being' of trait EI, followed respectively by 'sociability', 'self-control', and 'emotionality'. In terms of determinants, female gender, high income, and living in a rented home were significant predictors of TEIQue-SF's subscale – well-being and sociability factor. **Conclusions:** To our knowledge, this is the first study conducted among medical residents in Oman regarding their trait EI and its correlates. These results may help enhancing the cross-cultural applicability of trait EI-related core competencies developed by Accreditation Council for Graduate Medical Education.

Depressive Symptoms in Children with Epilepsy Attending a Tertiary Care Hospital in Oman

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ABSTRACT

Objectives: Epilepsy is the most common neurological disorder in children. Many studies have proven that depression is common in children with epilepsy. The aim of this study was to assess the proportion of depressive symptoms along with demographic data in children diagnosed with epilepsy in a tertiary care institution in Oman. **Methods**: This cross-sectional study was conducted between June 2016 and August 2018. We have included 75 children with age group from five to 12 years old, attending epilepsy clinic at Sultan Qaboos University Hospital who were diagnosed with epilepsy and already on treatment. Patients were excluded if they have mental retardation. Validated Depression Scale for Children (CES-DC) questionnaire was utilized to assess the level of depressive symptoms among children. In addition, we have looked at associated factors including seizure status in the last three months, compliance to antiepileptic medications, type of epilepsy, and number of antiepileptic medications. **Results:** In this study, we found that depressive symptoms were present in 39 (52%) of patients. We also found that 96% of the patients were compliant to medications. In addition, seizure was present in the last three months in 48% of the sample studies. There was no statistically significant association between any of the studied variables and depression. **Conclusions:** Although depression is highly prevalent in children with epilepsy, this study did not find any significant association between the CES-DC scores and the studied factors.

RADIOLOGY

A Comparison of Non-invasive Coronary Computed tomography Angiography Diagnostic Value to Conventional Invasive Coronary Angiography, the Gold Standard in Low-intermediate Cardiovascular Disease Risk Patients, in the NHC, Royal Hospital

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ABSTRACT

Objectives: Our aim is to prove that coronary computed tomography angiography (CCTA) in our cardiac CT

section at the Radiology Department of the Royal Hospital has a similar negative predictive value to the international research outcomes. By considering the variations, we have with CT machines, equipment, technicians, and reading radiologists. Numerous international studies have been done on the local level reflecting a high negative predictive value for CCTA (approximately 99%), the largest being The Promise Trial. Proving the above should aid in setting guidelines and standardized practice of care for patients in the low-intermediate risk group presenting with coronary vascular symptoms (stable angina). Doing so would allow a reduction in radiation exposure (eliminate patients unnecessarily undergoing both studies CCTA and CAG), reduce workload on hospital/appointment back-up, bed occupation (CAG requires admission), unnecessary undergoing of invasive procedure of CAG with its higher likelihood of adverse reactions, and of course cost-efficiency of these publicly provided services. *Methods*: This is a retrospective study conducted over the course of five years, starting 2012 to November 2017. It is based in one center, the cardiac CT section of the Radiology Department, Royal Hospital. Ethical approval to perform the study was received from the Ministry of Health. Patients who undergone cardiac CT followed by CAG during the study period, and classified as low-intermediate risk for coronary artery disease were included in the study. Patients under the age of 18, had major cardiac surgery/stenting, or a CAG prior to CT were excluded from the study. The end sample size was 314. Data was collected from the Al-Shifa PACS system. A coronary artery of ≥ 70% was considered significant and ≤ 69% as non-significant. Four coronary vessels were studied (LAD, RCA, LCX, and LMA). Proximal, middle, and distal segments were evaluated further in LAD, RCA, and LCX. LMA was further divided into origin/proximal and distal LMA. A total of 1256 vessels, 3454 segments in 314 patients were studied. A comparison was made between the outcomes of cardiac CT and coronary angiography (which is the gold-standard) to calculate sensitivity, specificity, negative predictive value, positive predictive value, positive likelihood ratio, and negative likelihood ratio using the chi-squared test and Pearson correlation coefficient. *Results:* RCA overall sensitivity was 100% (95% confidence interval (CI): 96.15-100.00; AUC: 1.00), specificity was 99.7% (95% CI: 98.22-99.99; AUC: 0.49), negative likelihood ratio was 1.03, positive predictive value was 100%, negative predictive value was 99.7% (95% CI: 99.67-99.68). LCX overall sensitivity, 50.0% (95% CI: 6.75-93.24), specificity 99.7% (95% CI: 98.21-99.99), positive likelihood ratio 155.00 (95% CI: 17.37-1382.90), negative likelihood ratio 0.50 (95% CI: 0.29-0.54), positive predictive value 66.7% (95% CI: 18.31-94.37), and negative predictive value 99.4% (95% CI: 98.30-99.75). LMA overall sensitivity 100% (95% CI: 47.81-100.00), specificity 100% (95% CI: 98.81-100.00; AUC: 1.00), negative likelihood ratio 0.00, positive predictive value 100%, and negative predictive

value 100%. LAD overall sensitivity 40% (95% CI: 5.27-85.33%), specificity 99.7% (95% CI: 98.21-99.99; AUC: 0.698), positive likelihood ratio 123.60 (95% CI: 13.26-1151.79), negative likelihood ratio 0.60 (95% CI: 0.29-1.23), positive predictive value 66.7% (95% CI: 17.67-94.90), and negative predictive value 99.0% (95% CI: 98.04-99.52). *Conclusions:* All vessel segments showed a high specificity and negative predictive value. This proves that CCTA is sufficient to exclude disease in low-intermediate risk group, not necessitating further imaging. The sensitivity levels remained lower the specificity but within the international level 4. This may have been overcome with a prospective study with standardized rules for naming and standardized reports amongst blinded readers.

Evaluation of Diagnostic Value of SPECT/CT Imaging Post – Radioiodine Therapy in Thyroid Cancer

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ABSTRACT

Objectives: To investigate the value of adding post therapy SPECT/CT to whole body 131I scintigraphy in detection of metastasis of well-differentiated thyroid carcinoma and to assess the utility of it in thyroid cancer staging, risk classification, and predicting the clinical outcomes of patients. *Methods*: A retrospective study included 78 patients who were treated with first radioactive iodine for well-differentiated thyroid carcinoma and had whole body 131I scintigraphy and SPECT/CT at Sultan Qaboos University Hospital between January 2014 and August 2017. The interpretations of both whole body scintigraphy and SPECT/CT images were reviewed. Findings were categorized as positive, equivocal, or negative uptake with respect to thyroid bed uptake, lymph node metastasis, or distant metastasis. The medical records of the patients were reviewed for the following clinical outcomes like alteration in clinical staging, risk classification, and change in management. SPSS software version 22 was used for collecting and analyzing the data. A generalized McNemar test was used to assess disagreement between whole body scintigraphy and SPECT/CT. *Results:* Among 78 patients, 14 were males (17.9%) and 64 were females (82.1%). Thyroid cancer risk stratification among these patients showed 40.3%, 49.3%, and 10.4% were in low, intermediate, and high-risk groups, respectively. Among 78 patients, 77 (98.7%) showed thyroid bed uptake in both whole body scan and SPECT/CT. Interpretation of 27 (69.2%) out of 39 radioactive foci for lymph node metastasis was changed with SPECT/CT ($p < 0.01$).

Ten of 22 positive lymph node uptake in whole body scintigraphy turned out to be negative finding in SPECT/CT (false positive finding), and 17 equivocal findings at whole body scintigraphy WBS were negative after adding SPECT/CT. SPECT/CT also corrected interpretation of whole body scan distant metastasis and detected non-avid iodine distant metastasis ($p < 0.01$). Two equivocal findings of distant metastasis at whole body scintigraphy were negative in SPECT/CT. Seven non-avid iodine uptake were detected in SPECT/CT. SPECT/CT findings helped change the clinical staging in 14 (17.9%) patients and therapeutic plan in 13 (16.7%) patients in which majority of them are within intermediate and high-risk groups. *Conclusions:* SPECT/CT is a powerful diagnostic tool that allows better detection and further characterization of lymph node and distant metastasis in intermediate and high-risk groups of well-differentiated thyroid carcinoma compared to whole body scintigraphy alone, which may alter the clinical staging, initial risk classification, and change management plan in significant number of patients.