Published Research -SQCCCRC

Head, Neck and Thoracic Cancers Program (2023)

1. Usmani S, Jain A, Hashmi SF, et al. 68Ga-DOTA-peptide PET/CT for radiotherapy planning and evaluating treatment response in the management of meningiomas. J Pak Med Assoc. 2023;73(6):1340-1343.

   Meningiomas overexpress somatostatin receptors (SSTR). PET imaging with SSTR ligands such as 68Ga-DOTA-peptide has recently shown high diagnostic accuracy in identification of meningiomas due to lack of normal bone and brain activity. PET-derived parameters, especially gross tumor volume (GTV) delineation improves inter-observer variability and appears to be particularly promising for RT planning. The potential strength of 68Ga-DOTA in the ongoing assessment of treatment response and disease progression in meningioma, particularly in the post-surgical and post-radiation settings is encouraging. More prospective randomized studies with large cohorts of patients are required to define the effective role of this modality.

2. Jayakrishnan B, Vivek Ravikumar, Sami M Bennji. Submassive Pulmonary Embolism: Current concepts. BMH Med. J. 2023;10(2):35-41.

   Review article: Submassive pulmonary embolism (PE) represents a subset of patients with disease severity between massive PE and the standard-risk PE. It is characterized by evidence of right ventricular (RV) dysfunction with a normal blood pressure. Risk-stratification in acute PE includes factors related to hemodynamic instability, RV overload, and cardiac biomarkers. The location of the thrombus or the clot burden are not a part of the risk stratification. Patients with confirmed submassive PE should be started on anticoagulation as soon as possible while monitoring closely for deterioration. Thrombolysis or catheter-based therapies may be considered on a case-by-case basis when the benefits outweigh the risk of hemorrhage. Patients who have a large clot burden, severe RV enlargement or dysfunction, high oxygen requirement, or are severely tachycardic needs early multidisciplinary assessment.

3. Jayakrishnan , B., Al-Rahbi , S., Al-Mubaihsi , S., & Balkhair , A. (2023). Duration of Antibiotics in Community Acquired Pneumonia, Physicians Fancy?. Journal of Advances in Medicine and Medical Research, 35(7), 74–78. doi:10.9734/jammr/2023/v35i74990.

In spite of guidelines on the use of antibiotics in Community acquired pneumonia (CAP), very often prescribed for longer than necessary. In a study on a small number of patients admitted with CAP (n-= 37), we found that the extent of opacities (single lobe,> 1 lobe unilateral or bilateral), the pattern (lobar, segmental or interstitial), gender, age ,co morbidities, aspiration risk , prior antibiotic use or a higher CURB score did not influence the prescription. We found that physicians use their instinct rather than scientific backing in this decision and often antibiotics are continued on discharge possibly due to a feeling of protection.

4. Jayakrishnan B, Burney I, Osman A, Bennji SM, Al- Hashami Z. Adenocarcinoma of Lung presenting as Diffuse Interstitial Lung Disease; 2023 Jul;24(7):e323. doi: 10.1016/S1470-2045(23)00224-3. PMID: 37414021.

   A young woman with bilateral extensive septal thickening and interstitial shadows on a ventilator for three weeks was extubated in 3 days after transfer to our ICU. Three months before she was evaluated in a private hospital for a similar CT picture and a flulike illness and was managed as a possible interstitial lung disease. On investigation here, she was found to have stage IV lepidic predominant adenocarcinoma of the lung with diffuse interstitial pneumonia-like pattern. Lepidic adenocarcinoma can have a similar picture as it can often shows invasion into vessels, pleura or lymphatics. She was treated with combination chemotherapy with pemetrexed and carboplatin initially and later with oral tyrosine kinase inhibitor Crizotinib. Though the patient presented with respiratory failure needing prolonged mechanical ventilation, she showed a rapid and durable response to the treatment.

5. Jayakrishnan B, Kausalya R, Al-Rashdi H, Davis K, Ali J, Al-Harthy M, Bennji SM. Bleomycin and Perioperative Care- A case report- Sarcoidosis Vasc Diffuse Lung Dis. 2023; 40 (3); e2023030. doi:10.36141/svdld. v40i3.14385.

   Bleomycin is associated with pulmonary toxicity ranging from pneumonitis, pulmonary fibrosis, to fatal acute respiratory distress syndrome. Oxygen administration can potentiate or precipitate bleomycin pulmonary toxicity, and the most common setting of oxygen exposure is during anesthesia. We report here the successful management and perioperative care of a patient with documented bleomycin pulmonary toxicity who had to undergo an eight hour long retroperitoneal surgery. With proper preoperative assessment, chest physiotherapy, inhaled steroids and bronchodilators, antibiotics, perioperative restriction of

oxygen and fluids and good postoperative care no further pulmonary insult was inflicted.

6. Bennji, S.M., Sagar, D., Jarnagin, L. et al. Endobronchial Ultrasound Staging for Lung Cancer: What We Know Now and What We Need to Know. Curr Pulmonol Rep (2023). https://doi.org/10.1007/s13665-023-00326-9

   (Since its introduction in 2003, EBUS-TBNA has undergone significant advancements, particularly in its applications for diagnosing lung cancer, mediastinal staging, and molecular profiling in NSCLC. The primary objective of this review was to provide a comprehensive overview of the current state of knowledge regarding the appropriate patient selection for EBUS-TBNA in mediastinal staging and the various factors that can influence its diagnostic performance. Additionally, the article aimed to identify existing knowledge gaps and outline potential future directions for research in this field. Collaborative efforts among specialized centers will be pivotal in driving further progress in EBUS-TBNA and enhancing the quality of care delivered to individuals with lung cancer).

7. Issa Al Jahdhami1, Husna Arshad1 , Hiba Omar, Sami M Bennji, Khalid Al Nomani, Manal Al Ghafri, Maryam Al Syabi, Sumaya Al Hinai, Adhra Al Mawali. Persistence of Symptoms Following Hospitalization for COVID19 in Oman: A Bidirectional Observational Study. Oman Med J. 2023. DOI 10.5001/omj.2023.120

   (This study sought to assess the prevalence persistent COVID-19 related symptoms in patients with mild, severe, and critical disease. We conducted a bidirectional cohort observational study that included all adult patients 18 years and above, admitted to Armed Forced Hospital Muscat between July 2020 and June 2022, with COVID-19 infection and discharged alive. Patients were requested to attend outpatient clinic at weeks 6 and 12 post-discharge, where they filled out a questionnaire and underwent a chest X-ray. Additionally, tests, such as blood tests, were performed if necessary. Health care workers with mild infection were also requested to fill out a questionnaire about their initial symptoms, persistent symptoms, and comorbidities. The study included 468 patients, comprising 261 hospitalized patients and 207 health care workers. On follow up, 39.7% of patients presented with residual symptoms, such as cough, breathlessness, and joint pain. These symptoms were more common in patients with medical comorbidities, particularly hypertension, diabetes, and dyslipidemia. Notably, these symptoms were also observed in patients

with mild disease. Post COVID-19 pulmonary fibrosis was observed in 21 patients, mainly among those admitted to the ICU or requiring prolonged hospitalization.

In conclusion this study highlights the persistence of symptoms and the prevalence of post-COVID-19 syndrome at two months post discharge, especially among patients with severe and critical disease during the acute phase. Various predictors of post-COVID-19 syndrome were identified, including female gender, older age, presence of co-morbidities, disease severity, and hypertension. Therefore, patients in these categories require thorough evaluation and long-term follow-up to manage residual symptoms).

8. **Omayma Elshafie** [1], **Abir Bou Khalil**[1], Maha Alshaibi[2], Boris Itkin[3], Babikir [4], Nicholas Woodhouse[1], Hypertensive Crisis in a Patient with a Functioning Mesenteric Paraganglioma: Dramatic Response to Octreotide Treatment . May 2023. AACE Clinical Case Reports.

Case Report: A 44-year-old woman was admitted with a severe hypertensive crisis and a blood pressure reaching 260/150 mm Hg. She was 2 months postpartum and had been previously diagnosed with pre-eclampsia. Secondary hypertension was suspected. This was confirmed by finding a 6 × 5-cm^2 retroperitoneal mass located using 68-Gallium DOTA–octreotate positron emission tomography/computed tomography and a grossly elevated plasma catecholamine level of 93 000 pmol/L (normal reference range: 650-2433 pmol/L). Treatment was immediately started with high doses of long- and short-acting octreotide. After 6 weeks and before surgery, the patient was normotensive, with a blood pressure of 120/70 mm Hg and a norepinephrine level of 6000 pmol/L. The tumor resection was uneventful, and histology confirmed the diagnosis. Following the surgery, the patient remained normotensive without any medications.
Discussion: PGLs and pheochromocytomas are neuroendocrine tumors, and most have receptors for octreotide. This case and another patient previously reported responded dramatically to treatment with a high dose of octreotide. Earlier reports of patients failing to respond are likely to have been the result of using a smaller octreotide dose.
Conclusion: We conclude that high doses of short- and long-acting octreotide are valuable in severely hypertensive patients. Our experience suggests that octreotide is of value in other patients with PGLs and pheochromocytomas. The response is rapid, sustained, effective, and with minimal reported side effects. To the best of our knowledge, this is the first report of a hypertensive crisis in a functional mesenteric PGL.

9. **Omayma Elshafie1**, Anjali Jain2, Summit Bichpuria3, Yamina Rassou4, Syed Furqan Hashmi5, **Abir Bou Khalil1 .** Calcaneus metastasis: A Rare Presentation of Poorly Differentiated Thyroid Cancer.

   A 60-year-old woman presented to our clinic with an acute onset 3 months history of right ankle pain. The patient had a history of poorly differentiated thyroid cancer which was treated with total thyroidectomy, left lateral neck dissection levels II-V and central neck dissection levels VI-VII followed by postoperative I- 131 radioactive iodine (^{131}I) ablation therapy 3.7 GBq six months ago.
   The post ^{131}I WBS showed residual iodine avid thyroid tissue with no other iodine avid disease or metastasis. SPECT/CT of the neck and chest showed non-avid bilateral pulmonary nodules, discrete nodal masses in mediastinum and non-avid bone lesions. FDG-PET CT scan showed FDG avid mediastinal lymph nodes, innumerable non-FDG avid sub-centimetric pulmonary nodules and few FDG avid lytic lesions in the skeleton.
   X-ray and MRI right ankle showed a well marginated lytic lesion in posterior body of calcaneus and 5x6 cm soft tissue mass lesion respectively. The histopathology of the calcaneus mass confirmed a positive immunostains for thyroid origin which includes thyroglobulin and TTf1 with pax 8. Endobronchial mediastinal and bronchial LNs biopsy confirmed thyroid cancer metastasis.
   Gene mutation showed HRAS and GNA13 with high tumor mutational Burden.We describe a rare case of poorly differentiated thyroid cancer who presented with right ankle pain and confirmed to be a calcaneus metastasis from the thyroid cancer which is an extremely rare site for bone metastases. Gene mutation points towards treatment with immune checkpoint inhibitors.