

## Cancer Cases III, continued

### A CASE OF AN UNUSUAL PET-POSITIVE MASS IN AN EX-SMOKER

Mohamed A. Elsawaf MD\* Marc Margolis MD Cristina Reichner MD  
Georgetown University Hospital, Washington, DC

**INTRODUCTION:** Positron emission tomography (PET) is often used in the evaluation of lung nodules and masses. Despite the widespread use of PET, there are limitations to its interpretation.

**CASE PRESENTATION:** A 71 year old Uruguayan male with a past medical history significant for coronary disease and tobacco abuse (96 pack year history) presented for evaluation of a chronic cough of 1 to 2 years. He describes his cough as occasionally productive of yellow sputum with sporadic streaky hemoptysis. He denied exposure to tuberculosis and had a negative PPD in the past. Discontinuation of his ACE inhibitor did not resolve the cough. Physical exam was significant for crackles at the right base. Pulmonary function testing was normal. Chest imaging revealed an irregular density in the right lower lobe. By report, he had a normal chest xray in Uruguay in 2004. CT and PET imaging revealed a 5.5 x 2.0 cm mass in the right lower lobe with a standardized uptake value of 4.8. CT imaging also revealed a 1.4 x 1.7 cm subcarinal lymph node. The patient underwent transbronchial biopsies and needle aspirations which were non-diagnostic. Because of the concern for malignancy, the patient underwent a surgical lung biopsy which revealed the mass to be a toothpick with surrounding marked interstitial fibrosis and bronchocentric dense lymphoplasmacytic infiltrate with no evidence of cellular atypia or malignancy. This was consistent with a reactive process. The toothpick was removed and since then, the patient's cough has resolved.

**DISCUSSIONS:** Foreign body aspiration often occurs, however, aspiration of a toothpick is a rare event. It has been reported in a canine which developed a cutaneous-pulmonary fistula. We present the first case of an aspirated toothpick which was PET positive and therefore, in an ex-smoker, highly suspicious for malignancy. PET is often utilized to address the difficulty in differentiation between malignant and benign pulmonary nodules and masses. The most commonly used tracer in PET imaging is (18) F-fluorodeoxyglucose (FDG), whose uptake is increased in most types of cancers. Despite this, FDG is not specific for malignant cells. False positive results in benign conditions often confound PET interpretation. Inflammatory cells such as neutrophils and activated macrophages at infectious and non-infectious sites often display increased FDG uptake. Common examples include infectious processes such as tuberculosis, cryptococcosis, paragonimiasis, and pneumocystis. Noninfectious conditions may also lead to PET positivity. These include, but are not limited to, radiation fibrosis, hyperplastic bone marrow, post surgical changes, pneumoconiosis, and foreign bodies. In the literature there have been few cases of foreign bodies presenting as PET positive masses, and most of them have been post-surgical. Examples include a retained abdominal surgical sponge and a pulmonary suture.

**CONCLUSION:** We present the first case of a patient who unknowingly aspirated a toothpick and later presented with a PET positive mass that was highly suspicious for malignancy. Our case is another example of the limited specificity of PET scans which are used with increasing frequency in the evaluation of lung nodules and masses. Awareness of conditions that may generate false positive results will aid the clinician to more accurately interpret PET results.

#### REFERENCES:

1. Chen MY, Ng KK, Ma SY, et al. False-positive fluorine-18 fluorodeoxy-D-glucose positron emission tomography imaging caused by retained gauze in a woman with recurrent ovarian cancer: a case report. *European Journal of Gynaecological Oncology* 2005; 26
2. Ghersin E, Keidar Z, Brook O, et al. A new pitfall on abdominal PET/CT: A retained surgical sponge. *Journal of Comput Assist Tomogr* 2004. 28(6):839-841

**DISCLOSURE:** Mohamed Elsawaf, No Financial Disclosure Information; No Product/Research Disclosure Information

## Cardiovascular 2:00 PM - 3:30 PM

### ACQUIRED BRUGADA SYNDROME PRESENTING AS VENTRICULAR TACHYCARDIA STORM

Jacob S. Koruth MBBS, MD\* Sunil Jagadeesh MBBS Karen S. Rovang MD Aryan N. Mooss MBBS, MD Tom Hee MD Chandra K. Nair MBBS, MD Creighton University, Omaha, NE

**INTRODUCTION:** Ventricular tachycardia (VT) storm can occasionally be refractory to cardioversion and antiarrhythmic drug therapy. We

present a case of Brugada pattern induced by flecainide and multiple metabolic abnormalities that needed prolonged cardiopulmonary resuscitation (CPR) totaling 50-60 minutes with successful outcome.

**CASE PRESENTATION:** A 62 year old female was transferred from an outside hospital for refractory VT. The patient had a history of recurrent episodes of supraventricular tachycardia that was controlled with flecainide at 150 mg twice daily. She had failed multiple other antiarrhythmics and had refused radiofrequency ablation. Prior electrocardiograms and echocardiograms were normal. During the index hospitalization she had presented with traumatic left sided hydropneumothorax, gastric perforation and splenic laceration. The patient was found to be hypotensive with a blood pressure of 90/50, heart rate of 114/min, oxygen saturation of 80% on room air and a temperature of 95 degrees Fahrenheit. Resuscitative measures were begun and a preoperative electrocardiogram revealed sinus rhythm with a Brugada pattern. During surgery, the patient went into pulseless VT requiring CPR. She was initially treated with intravenous lidocaine and then amiodarone with multiple cardioversions performed as per ACLS protocols. The patient had three more recurrence of VT that then deteriorated in to pulseless electrical activity (PEA). The patient arrived intubated, on vasopressors and amiodarone and was receiving CPR for alternating VT and PEA. On examination she was noted to be comatose with fixed and dilated pupils. Her EKG continued to exhibit the Brugada pattern. Immediate bed side echocardiography revealed globally reduced left ventricular function with an ejection fraction of approximately 25- 30 % with normal right sided and valvular function. The patient was empirically administered 10ml of 10% calcium gluconate, 3 liters of normal saline and 154meq of intravenous sodium bicarbonate presumptively to treat possible sodium channel blocker toxicity. A blood gas revealed metabolic and respiratory acidosis and serum chemistries revealed new onset acute renal failure (serum creatinine- 3.2mg/dl) and mild hyponatremia (129meq/ml), potassium of 5meq/ml and borderline troponins. The EKG normalized over the course of 48 -72 hours and she had no further recurrence of arrhythmia. She was successfully discharged home after a month long hospitalization.

**DISCUSSIONS:** The Brugada syndrome is a genetic abnormality characterized by terminal positivity of the QRS complex followed by coved ST-segment elevation and inverted T waves in the right precordial leads. The absence of S wave in the left lateral leads precludes the alternative differential diagnosis of right bundle branch block. While the Brugada syndrome requires specific criteria to be fulfilled, the Brugada pattern can be seen in various conditions such as hyperkalemia, febrile state, acidosis, hypothermia and ischemia. Our patients had a combination of probable flecainide toxicity secondary to impaired excretion from renal failure, acidosis, and hypothermia that resulted in the Brugada pattern. Isotonic or hypertonic sodium chloride and sodium bicarbonate have been shown to reverse flecainide toxicity by providing sodium to the blocked sodium channels.

**CONCLUSION:** Upon identification of the Brugada pattern on the EKG, the physician has to be aware that this is not only a hallmark of a possible genetic disease, but also may be a precursor to imminent malignant arrhythmias. Therefore, the presence of this finding should not be ignored and attempts at identifying and correcting reversible causes should be initiated and appropriate therapy instituted.

#### REFERENCES:

1. Goldman MJ, Mowry JB, Kirk MA. Sodium bicarbonate to correct widened QRS in a case of flecainide overdose. *J Emerg Med*. 1997 Mar-Apr;15(2):183-6
2. Khavandi A, Walker PR. Flecainide cardiotoxicity precipitated by electrolyte imbalance. Caution with thiazide diuretics. *Emerg Med J*. 2007 May;24(5):e26.

**DISCLOSURE:** Jacob Koruth, No Financial Disclosure Information; No Product/Research Disclosure Information

### INFLUENZA MYOCARDITIS ASSOCIATED WITH PROLONGED CORRECTED QT INTERVAL

Dipesh Pokharel MD Derek Norman MD Beau M. Hawkins MD\* Pedro Lozano MD University of Oklahoma HSC, Oklahoma City, OK

**INTRODUCTION:** Occasionally myocarditis has been associated with influenza virus infection. Old literature, based on non-specific markers, suggested myocarditis as a common occurrence with influenza infection (1). However, a recent large series examining 152 patients with influenza identified no patients with elevated troponins suggesting that the prevalence of Influenza associated myocarditis is very rare (2). Here we report