Tissue Biopsy to the Rescue: The Art of Modern Medicine

Rahul Kumar, Pooja Khosla, Vinus Taneja, Manuj Sondhi
1DNB Trainee; 2Senior Consultant; 3Associate Consultant; 4Clinical Assistant, Department of Internal Medicine, Sir Ganga Ram Hospital, Delhi, India

Sir,

The importance of tissue biopsy in making a diagnosis is well established. As practicing clinicians, every now and then, we stand at a crossroads where we need microbiological/histopathological evidence to guide us further. Even though clinical judgment takes precedence, tissue diagnosis is equally important in today’s era. We are writing this to emphasize the same in a clinical scenario that we recently encountered. A 54-year-old male with a known case of type II diabetes presented with low-grade fever and pain in the right thigh for 2 months, which aggravated on walking. The patient gave a history of fracture of the right proximal femur 20 years back in a road traffic accident, which was treated with an Illizarov fixator. On examination, the patient was conscious, oriented, and hemodynamically stable. Systemic examination was normal. On local examination of the right thigh, there were no signs of inflammation. An X-ray of the right femur was done, and it revealed a healed fracture. In view of persistent pain at the fracture site, magnetic resonance imaging (MRI) of the right proximal thigh was done, which showed osteomyelitis of metaphyses of the right femur with sinus formation and extension into adjacent muscles (Fig. 1). Initial blood work was normal. Inflammatory markers were raised. A diagnosis of osteomyelitis of the right femur was made. A strong suspicion of tubercular osteomyelitis was made considering the long duration of illness with low-grade fever, no acute signs of inflammation, and normal blood parameters. Debridement and curettage were done, and samples were sent for microbiological and histopathological examination. Both pus and tissue cultures revealed Citrobacter brakii. Tissue and pus Mycobacterium GeneXpert and Ziehl–Neelsen staining for acid-fast bacilli were negative. Biopsy revealed pyogenic osteomyelitis. The patient was treated with 6 weeks of IV carbapenems and is currently doing well on regular follow-up.

India is an endemic country for tuberculosis. A patient presenting with this history and baseline investigations would have been started on empirical antitubercular therapy had the tissue biopsy not been done. However, this one correct step helped save the patient from months of empirical therapy and pointed us in the right direction of treatment. This case classically describes how modern medicine has revolutionized the diagnostic skills of a clinician. Even in resource-limited countries, an attempt should be made to obtain tissue diagnosis to improve the overall management and outcomes of patients. Tissue biopsy, being an invasive procedure, can have complications, adversely affecting the outcome of the case, particularly in malignant tumors. Therefore, it should be done with proper planning in conjunction with a multidisciplinary team and appropriate prebiopsy imaging.

REFERENCES

Supraventricular Tachycardia: An Uncommon Cause of Chronic Cough

Ambika Sharma, Kanhaiya Lal Meena, Raghuvir Singh
1Assistant Professor; 2Junior Resident, IRD Hospital, SMS Medical College, Jaipur, Rajasthan, India Supraventricular Tachycardia: An Uncommon Cause of Chronic Cough

Sir,

We report a case of cardiac arrhythmia-induced chronic cough that was managed by radiofrequency ablation (RFA) of a slow pathway.

A 16-year-old girl complained of having a dry cough for 5 years, which was off and on initially but later was persistent for 7 months. The cough was short but multiple times in a minute. Her daily, repeated, and frequent coughs were highly upsetting to her and were interfering with her schoolwork. She reported that after slight exertion, her breath would get short. Her appetite had decreased over the past 5 months, and she lost 5 kg of weight. She occasionally complains of palpitations as well.

She didn’t experience any bowel or bladder issues, fever, frequent colds, syncopal episodes, or chest pain. She also says she has never had gastric reflux disease or acid peptic disease. No complaints of throat and ear problems. She made no mention of any serious previous illnesses. She was initially treated by an ear, nose, and throat specialist for the aforementioned complaints, and antihistamines inhaled nasal corticosteroid spray, and proton pump inhibitors were started. Computed tomography (CT) of the paranasal sinus and fiberoptic laryngoscopy were done, and the results were normal. With these medications, the patient did not feel any better. She later visited a pulmonologist, where she underwent a spirometry and chest X-ray investigation. The chest X-ray was normal, but spirometry results were unacceptable due to coughing. The patient was started on the line of bronchial asthma and on inhalers (inhaled corticosteroids and inhaled long-acting β-agonists) and antitussive cough syrups. Even after taking her medication continuously for 5 months, her coughing problem did not get better.

With all the above history, patients presented to us in our patient department. Upon physical examination, the patient displayed a pulse rate of 160/minute (regular, normovolemic) with a pulse oximeter saturation of 100%, a respiratory rate of 16/minute, and a blood pressure of 104/68 mm Hg. She was afibrile and comfortable during an examination except for intermittent but frequent short coughs. A head-to-toe and respiratory system examination revealed no remarkable findings. Bilateral vesicular breath sounds were detected during chest auscultation without any added sounds. The cardiovascular examination was unremarkable, except for the presence of tachycardia. After 15 minutes of rest, the patient was reevaluated and showed a heart rate of 110/minute. However, due to slight mobility and continued coughing, the pulse rate increased to 160/minute. Supraventricular tachycardia (SVT) was thought to be the primary cause of her chronic cough.

Fig. 1: Magnetic resonance imaging (MRI) thigh showing osteomyelitis of metaphyses of the right femur with sinus formation and extension into adjacent muscles
Further investigations were conducted, including an electrocardiogram (ECG) that showed sinus tachycardia (Fig. 1) and a normal two-dimensional echocardiogram (ECHO). Routine blood tests, such as complete blood counts, liver and kidney function tests, and thyroid profiles, were all normal. Additionally, chest X-rays and CT chest with virtual bronchoscopy showed no abnormalities. A cardiologist was consulted, and an electrophysiology study was conducted. The basal ECG was normal, except for sinus tachycardia, with a rate of 140/minute. No manifest preexcitation was found. During V pacing, VA conduction was concentric and decremental until 350. Although no sustained tachycardia was induced, slow pathway modification was performed due to the presence of ECHO, AH jump, recurrent palpitation, and cough. Successful RFA of the slow pathway region was performed at the M2–M1 junction. After a 30-minute wait and vigorous stimulation protocol, no tachycardia was induced. Following the procedure, the patient’s condition improved significantly, and her heart rate remained stable at 75 beats/minute (Fig. 2). The cough completely disappeared. At the 3- and 6-month follow-ups, no complaints recurred, and the patient remained asymptomatic.

Supraventricular tachycardia (SVT) is an arrhythmia that arises above the bundle of His and results in heart rates of >150 beats/minute. It has an electrophysiologic basis of reentry or automaticity. Palpitations, pulsations in the neck, discomfort in the chest, dyspnea, hyperventilation, lightheadedness, and anxiety are common SVT symptoms. Cough, chest pain, diaphoresis, nausea, presyncope, and syncope are uncommon symptoms that SVT patients may experience.\(^1\)

Some cases of ventricular arrhythmia and supraventricular arrhythmia have been documented in the literature when they occur with the symptom of coughing, which may first be mistaken for a respiratory tract condition. The authors hypothesized two potential reasons for the arrhythmia that caused cough in these patients: increased pulmonary artery blood flow generating ventricular arrhythmia and anatomically close contact between phrenic nerve and atrium causing the supraventricular arrhythmia.\(^2\)–\(^4\)

After ruling out other potential causes, the chronic cough was completely alleviated by RFA. This case also emphasizes the importance of careful physical examination in diagnosing the disease on time. A similar case in the past was reported where a man was diagnosed with cardiac arrhythmia after 15 years of cough symptoms.\(^5\)

**References**


---

**Letter to Editor in Response to Article “Diagnostic Approach to Extrapulmonary Tuberculosis by Cartridge-based Nucleic Acid Amplification Test” Published in J Assoc Physicians India 2023; 71(6):34–37**

Madhu Sudan Barthwal\(^1\), Sachin Dole\(^2\), Aman Barthwal\(^3\)

\(^1\)Professor and HOD; \(^2\)Professor, Department of Respiratory Medicine; \(^3\)Senior Resident, Department of Anesthesiology, Dr DY Patil Medical College, Hospital & Research Centre, Dr DY Patil Vidyapeeth (Deemed to be University), Pune, Maharashtra, India

We read with interest an article titled “Diagnostic Approach to