

Case Report

A Case Report on Pancoast Tumor

Um ul Baneen Zehra,¹ Mohammad Shah Hussain,² Fateema Tanveer,³
Muhammad Ali Lak,⁴ Fatima Ali,⁵ Wasay Arshad⁶

Abstract

To present and discuss a case of Pancoast Tumor: an apical lung neoplasm, and subsequently highlight the clinical importance of chronic and progressive complaints, pertaining to this pathology, in helping to detect it and form an early diagnosis.

Case: A 55-year-old non-smoker male patient, with a known case of gout and uncontrolled diabetes mellitus, presented to emergency with complaints of severe right-sided pain in the chest, subscapular and axillary regions. His electrocardiogram (ECG) and cardiac enzyme came out to be normal. Chest X-ray showed an opacity in the apex of the right lung. On contrast-enhanced computed tomography (CECT), there were enhancing multi-focal lesions in the apical segment of the right lung making a diagnosis of Pancoast tumor.

Even though, it may be missed in the early stages as the tumor cannot be seen on imaging investigations and biopsy is more specific at this time, imaging studies do play a substantial role in diagnosing this tumor. Due to the challenges in diagnosing this rare type of lung neoplasm, it is usually diagnosed when it has locally invaded.

Conclusion: Awareness regarding clinically important warning signs of Pancoast tumors such as chronic and progressive neck and shoulder pain can help healthcare professionals, most notably but not exclusively, chiropractors, in prompt identification of these signs and symptoms, thus facilitating a timely medical and/or surgical referral and an early diagnosis of this pathology. A thorough examination can assist in early diagnosis and lead to a subsequent decrease in mortality and an improvement in quality of life.

Keywords: Pancoast syndrome, Neck pain, Lung neoplasms

How to cite: Zehra UB, Hussain MS, Tanveer F, Lak MA, Ali F, Arshad W. Case report: A Case Report on Pancoast Tumor. *MedERA-Journal of CMH LMC and IOD*. 2023; 5(1): 28-31

DOI: doi.org/10.5281/zenodo.8307489

Introduction

In lung superior sulcus tumors, Pancoast tumor, affecting the apex of the lung accounts for 3% to

5% of all lung neoplasms; and more than 95% of all the cases of Pancoast tumors are reported to be non-small cell type. This pulmonary neoplasm usually presents with shoulder pain and arm weakness as they invade the brachial plexus and spine.¹ Treating this rare cancer has been a challenge in the past, but many new scientific advances have been made to make it manageable through a combined modality

1-6: CMH Lahore Medical College & IOD.

Correspondence:

Dr. Um ul Baneen Zehra, Department of Medicine, CMH Lahore Medical College & IOD, Pakistan E-mai: umulbaneen382@gmail.com

Submission Date: 10-04-2023
1st Revision Date: 22-04-2023

approach.² Moreover, MRI can help with tumor staging; it helps detect the local extent of the tumor as radical tumor resection increases the chances of cure.³

Case presentation

A 55-year-old non-smoker male patient (MR number: 0683352; IRB number: 607/ERC/CMH/LMC) presented to the emergency department, Combined Military Hospital-Lahore on 26-September-2022 with severe right-sided pain in the chest, subscapular and axillary regions. The pain started in his right subscapular region 13 days back; then there was worsening of pain which was constant and started radiating to chest and axilla. His blood pressure was 130/90 mm Hg, respiratory rate was 22 breaths per minute, SpO₂ was 89% at room air and heart rate was 129 bpm. The ECG findings were unremarkable except for tachycardia and high sensitivity Troponin-I level (0.02ng/ml) was found within normal range (Figure 1). His pain was relieved by injectable painkillers (injection Dicloran/ injection Toradol/ injection Falgan). His vitals were strictly monitored; and for low oxygen saturation, he was advised to sit up in a propped-up position and oxygen was given through nasal prongs at a rate of 2-4 Litres per minute. The next day (27 September 2022), he was shifted to the ward for further treatment. There was no history of anorexia or weight loss, however, there was history of vomiting, and the patient was only tolerating a liquid diet for a few weeks. He was a known case of gout and uncontrolled diabetes for 12 years.

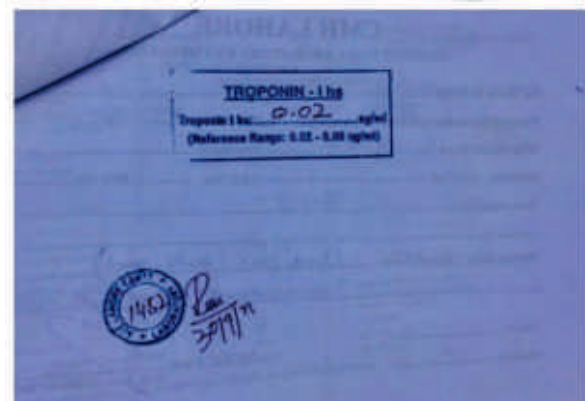


Figure 1: (A) Electrocardiogram of the patient (Normal); (B) Cardiac Troponin-I high sensitivity (Normal).

On examination, there was clubbing of fingers and the patient had difficulty walking. There was hoarseness of voice and mild non-productive cough. On chest auscultation, there were bilateral wheezes on the right side along with coarse crepitations. He seemed well; however, he was irritable due to the pain.

A chest X-ray done on 27-September-2022 showed opacity in the apex of the right lung which has been marked by an arrowhead (Figure 2)



Figure 2: X-ray of the chest. Opacification of right upper lung zone- consolidation (arrowhead). Patchy ground glass haze seen in right mid and bilateral lower lung zones (*).

Contrast-enhanced computed tomography (CECT) of the chest done on 3rd day of admission (29-September-2023) revealed poorly enhancing multifocal areas of consolidation with air bronchogram in the right lung, largest in the apical segment of the right upper lobe along with a few enlarged mediastinal lymph nodes, largest measuring 13 mm in short-axis diameter (SAD) in right paratracheal location. The largest lesion in the apical segment of the right upper lobe reached up to the hilum. These areas of consolidation were seen intercommunicating with each other. Mosaic attenuation was seen bilaterally. The left lung was otherwise grossly unremarkable (Figure 3). Lytic lesions were seen in the right humeral head and glenoid fossa.

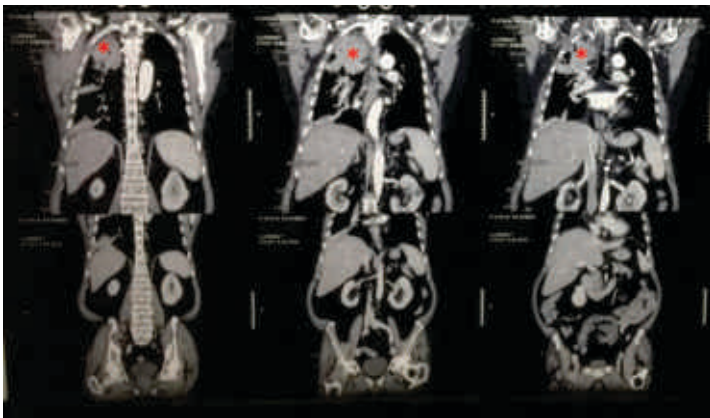


Figure 3: CT neck, chest, abdomen, and pelvis with contrast. Apical mass, most likely a Pancoast tumor (*).

His bronchoscopy done on 6-October-2022 was unsuccessful, because it was abandoned midway as the patient vomited and aspirated stomach contents. A diagnosis of a superior sulcus/Pancoast tumor was made. A biopsy was planned. The patient left the hospital without medical advice on 7-October-2022.

Discussion

While assessing a patient in an emergency with chest and shoulder pain we can have tunnel vision and focus solely to refer such patients to cardiology and rheumatology respectively.⁴ However, further

assessment in such patients is very important as in this case report, thorough examination and appropriate investigations revealed a diagnosis of Pancoast tumor and ruled out any cardiac disease. In the present case report, the patient had right-sided pain in the chest, subscapular and axillary regions indicating the characteristic signs and symptoms of Pancoast syndrome due to involvement of C8 to T2 nerves; however, there was neither any feature of Horner syndrome (ipsilateral ptosis, anhidrosis, and miosis due to interruption of sympathetic chain) nor atrophy of intrinsic muscles of the hand.⁵ It can also lead to superior vena cava syndrome caused by compression or invasion of the superior vena cava or brachiocephalic vein by the malignancy; symptoms vary from asymptomatic to congestion and edema of head and neck to life-threatening emergencies causing upper airway obstruction depending on the extent of obstruction.⁶ but no such complication of Pancoast tumor was observed in this patient. According to a study, smokers with shoulder pain should get their X-ray done as it is a strong suspicion of apical lung cancer.⁷ however, our patient was a non-smoker.

Many patients with similar symptoms have a delayed diagnosis or misdiagnosis as they are mistaken for musculoskeletal disorders, which can lead to poor prognosis.⁸ Studies show that the best survival results occur in patients who receive combined preoperative radiation and surgery. Patients with brachial plexus, Horner syndrome, ipsilateral neck node neck metastasis, and rib invasion are eligible for combined modality therapy expecting survival of 30 to 40 percent, however, those with metastasis in subclavian vessels, mediastinal lymph nodes, and vertebrae are treated with high doses of external radiation therapy.⁹ Preoperative chemoradiotherapy followed by tumor resection is associated with a 5-year survival rate in more than 50 percent of the patients so early diagnosis and treatment can be life-changing.¹⁰

Conclusion

Healthcare professionals, especially chiropractors, should be aware of the symptoms related to Pancoast tumor. The proper examination and investigations in such a patient may lead to an early diagnosis of this tumor before the involvement of other structures at thoracic inlet. It can lower mortality and improve the quality of life due to in-time referral for further treatment including surgery and radiotherapy.

References

1. Chu EC, Trager RJ, Shum JS, Lai CR. Pancoast tumor presenting as neck pain in the chiropractic office: a case report and literature review. *American J Case Reports*. 2022; 23(1): 937052-1. doi:10.12659/ AJCR.937052
2. Archie VC, Thomas Jr CR. Superior Sulcus Tumors: A Mini-Review. *Oncologist*. 2004; 9(5):550-555. doi: 10.1634/theoncologist.9-5-550
3. Beale R, Slater R, Hennington M, Keagy B. Pancoast tumor: use of MRI for tumor staging. *Southern Medi J*. 1992;85(12):1260-1263. doi: 10.1097/00007611-199212000-00027.
4. Zarogoulidis K, Porpodis K, Domvri K, Eleftheriadou E, Ioannidou D, Zarogoulidis P. Diagnosing and treating pancoast tumors. *Expert Review Respir Med*. 2016; 10(12):1255-8. <https://doi.org/10.1080/17476348.2017.1246964>.
5. Gundepalli SG, Tadi P. Lung Pancoast Tumor. 2019; 170(4): 291-294. doi: 10.7417/CT.2019.2150.
6. Klein-Weigel PF, Elitok S, Ruttloff A, Reinhold S, Nielitz J, Steindl J, Hillner B, et al. Superior vena cava syndrome. *Vasa*. 2020; 50(4):250-264. doi: 10.1024/0301-1526/a000919
7. Al Shammari M, Hassan A, Al Jawad M, Farea A, Almansour A, Al Yousif G, et al. Pancoast tumor: the overlooked etiology of shoulder pain in smokers. *Am J Case Rep*. 2020; 21(1):926643. doi: 10.12659/ AJCR.926643
8. Issı Z, Erkin Y. Do we inspecting the patient face who has shoulder pain?. *Agri: Agri (Algoloji) Derneği'nin Yayın Organidir= J Turkish Soc Algology*. 2020; 32(2):109-112. doi: 10.5505/agri.2018.14892
9. Hilaris BS, Martini N, Wong GY, Nori D. Treatment of superior sulcus tumor (Pancoast tumor). *Sur Clin North Amer*. 1987; 67(5):965-977. doi: 10.1016/s0039-6109(16)44335-5
10. Vos CG, Dickhoff C, Paul MA, Dahele M, Smit EF, Hartemink KJ. Treatment and prognosis of superior sulcus tumours. *Nederlands Tijdschrift Voor Geneeskunde*. 2012; 156(49):5419-. <https://pubmed.ncbi.nlm.nih.gov/23218036/>

Authors Contribution

UBZ: Conceptualization of study

FT: Literature Search

MAL: Statistical Analysis

MSH: Data Collection and Analysis

FA: Drafting, Revision

WA: Writing of Manuscript

All authors are equally accountable for accuracy, integrity of all aspects of the research work.