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Case report
Prikaz slučaja
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CAVITARY PULMONARY METASTASES – A CASE REPORT

KAVITARNE PLUĆNE METASTAZE – PRIKAZ SLUČAJA

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Summary
Introduction. The lungs are one of the most common sites of metastases from carcinomas and sarcomas. Secondary pulmonary tumors are typically multiple, oval in shape and located in the lung periphery. Cavitation of metastatic pulmonary nodules is extremely rare and most often occurs in primary squamous cell carcinomas of the head and neck and the cervix. **Case Report.** We report the case of a 62-year-old man presenting with dysphagia for solid foods and weight loss in the last two months. The patient had a history of long-term smoking and regular alcohol consumption. A barium meal showed irregular stricture in the proximal esophagus, highly suspicious of malignancy. Computed tomography of the neck and thorax showed tumor infiltration of the cervical and proximal part of the thoracic esophagus and multiple cavitary and solid pulmonary metastases. **Conclusion.** High-resolution computed tomography of the chest and radiological features such as a wall nodules, irregular internal contour of the cavity and spiculated edges allow precise characterization of cavitary metastatic lesions.
Key words: Esophageal Neoplasms; Neoplasm Metastasis; Lung Neoplasms; Carcinoma, Squamous Cell; Tomography, X-Ray Computed

Sažetak
Uvod. Pluća su jedno od najčešćih mesta metastaziranja karcinoma i sarkoma druge lokalizacije. Sekundarni tumori pluća su tipično multipli, ovalnog oblika i periferno lokalizovani. Kavitacija metastatskih plućnih nodusa je izuzetno retka i najčešće se javlja kod primarnih skvamoznih karcinoma porekla glave i vrata kao i grlića materice. **Prikaz slučaja.** Muškarac, star 62 godine, javlja se na pregled zbog disfagije u poslednja dva meseca i gubitka telesne težine. Pacijent navodi da je dugogodišnji pušač i da redovno konzumira alkoholna pića. Načinjena je pasaža jednjaka, gde je uočeno nepravilno, suspektno suženje proksimalnog jednjaka. Na pregledu vrata i grudnog koša kompjuterizovanom tomografijom potvrđena je tumorska infiltracija cervikalnog i proksimalnog dela torakalnog jednjaka. Takođe, uočene su multiple kavitarne i solidne plućne metastaze. **Zaključak.** Kompjuterizovana tomografija pluća visoke rezolucije i radiološke karakteristike promene kao što su iregularnost konture i nodularne promene zida, kao i spikulirane ivice omogućavaju preciznu karakterizaciju kavitarnih metastatskih lezija.
Ključne reči: karcinom jednjaka; metastaze; karcinom pluća; karcinom skvamoznih ćelija; CT

Introduction

The lungs are one of the most common sites of metastases which generally originate from the breasts, colon, kidneys and head and neck region. Secondary pulmonary tumors are typically multiple, oval in shape and located in the lung periphery. Atypical presentations include cavitation, calcification, hemorrhage around metastatic nodules, pneumothorax, air-space pattern, tumor embolism, endobronchial spreading, and solitary masses [1]. Cavitation of metastatic pulmonary nodules is extremely rare and occurs in approximately 4%, most commonly in primary squamous cell carcinomas of the head and neck and the cervix [2].

Case Report

A 62-year-old male was admitted to the emergency department with dysphagia for solid foods and unexplained weight loss in the past two months. The patient had a history of long-term smoking and regular alcohol consumption. Physical examination and laboratory findings were unremarkable. A barium meal showed irregular stricture of the proximal esophagus, highly suspicious of malignancy **(Figure 1)**. Computed tomography (CT) of the neck and thorax showed a tumor infiltration of the cervical and proximal part of thoracic esophagus, necrotic mediastinal and supraclavicular lymph nodes **(Figure 2)**, as well as multiple cavitary and solid pulmonary metastases **(Figures 3 and 4)**. Later, esophagoscopy was performed and squamous cell carcinoma was confirmed by histological examination. Due to coronavirus disease 2019 pandemic, the patient did not come for a follow up and therefore we have no further information about the disease outcome.

Discussion

By definition, a cavity presents a gas-filled space within a pulmonary consolidation, mass, or nodule where the cavity occurs due to drainage of a necrotic component through the bronchial tree [3]. The differential diagnosis of pulmonary cavitary lesions is wide and includes neoplastic, infectious, congenital and

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Abbreviations
CT – computed tomography

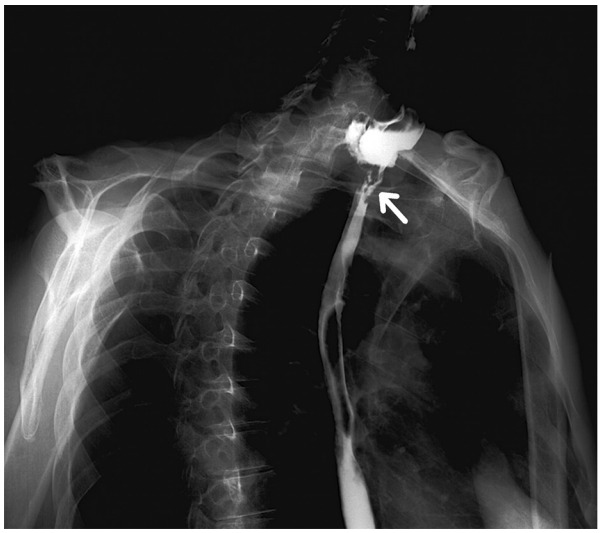

Figure 1. Barium meal showed irregular stricture of the proximal esophagus due to carcinoma (arrow)
Slika 1. *Pasaža jednjaka. Nepravilno suženje proksimalnog jednjaka (strelica)*

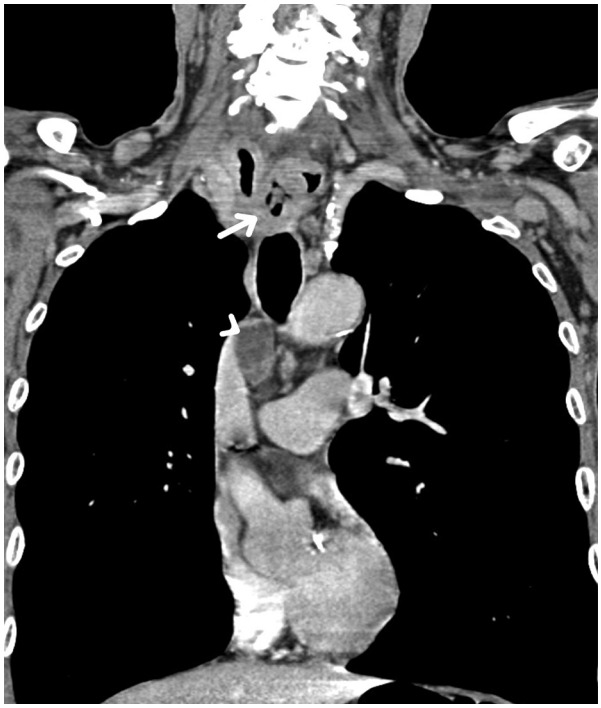

Figure 2. Coronal contrast-enhanced CT image of the neck and thorax; neoplastic infiltration of the cervical and proximal part of the thoracic esophagus (arrow) and necrotic mediastinal lymph nodes (arrowhead)
Slika 2. *Koronalna postkontrastna kompjuterizovana tomografija vrata i toraksa. Tumorska infiltracija cervikalnog i distalnog dela torakalnog segmenta jednjaka (strelica). Nekrotični medijastinalni limfni čvorovi (glava strelice)*

Figure 3. Axial CT image of the thorax (lung window); multiple cavitary pulmonary metastases (arrows)
Slika 3. *Aksijalna kompjuterizovana tomografija toraksa (plućni prozor). Multiple kavitarne metastatske lezije plućnog parenhima (strelice)*

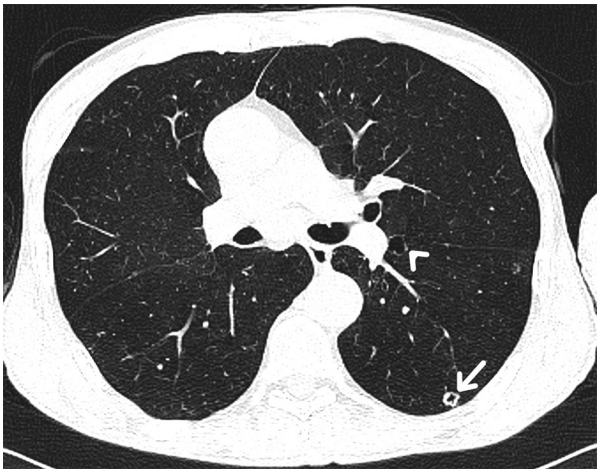

Figure 4. Axial CT image of the thorax (lung window); metastatic cavitary pulmonary lesion with irregular contours and wall nodules (arrow) and cavitary metastasis located centrally (arrowhead)
Slika 4. *Aksijalna kompjuterizovana tomografija pluća (plućni prozor). Metastatske kavitarne lezije plućnog parenhima sa nepravilnom konturom i mekotkivnim nodusima u zidu (strelica). Metastaza lokalizovana centralno u plućima (glava strelice)*

autoimmune diseases as well as pulmonary infarction and septic embolism. A cavitating carcinoma usually has nodular or irregular internal contours due to mural nodules of various size of neoplastic tissue and uneven process of necrosis [4]. Spiculation is often seen in malignant processes due to lymphangitic spread of tumor, fibrosis and local infiltration of the tumor. Moreover, carcinomas tend to invade beyond the interlobular septa, which is rare in benign processes [5].

The period of clinical symptoms can be supportive to make a diagnosis. Acute and subacute processes often include infectious, inflammatory and cardiovascular causes. Cavities with a chronic evolution (> 12 weeks) indicate chronic infections (often mycobacterial or fungal), autoimmune conditions, congenital lesions and malignancy [6]. Malignancy and chronic infections are accompanied by fever, weight loss, long-standing cough and fatigue. Older age, history of smoking and cancer favor the diagnosis of malignancy.

Conclusion

It is crucial to differentiate malignant from non-malignant lesions. High-resolution computed tomography of the chest and radiological features such as wall nodules, irregular internal contour of the cavity and spiculation, help in precise characterization of cavitary lesions. The clinical context such as a patient history and duration of clinical symptoms may also contribute to accurate diagnosis. In uncertain cases, bronchoscopy or computed tomography-guided biopsy and pathological examination are recommended to confirm the diagnosis.

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