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Abdominal wall solid tumor: An unusual presentation of metastatic bronchogenic carcinoma, a case report

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ABSTRACT

INTRODUCTION

Tumors of the abdominal wall are divided into benign and malignant lesions which are composed of primary tumors and by the parietal invasion of intraabdominal tumors and metastatic parietal implants. Metastatic tumor of abdominal wall has an incidence of approximately 0.7–9%. Most common causes are secondary to neoplasms of colonic or gastric origin and implants of trocar holes, metastasis of lung origin is very rare. This case is presented to highlight the rare presentation of bronchogenic carcinoma as a metastatic abdominal wall tumor.

CLINICAL PRESENTATION

54/M with lump in right lower abdomen that suddenly increased in size with pain for 1 week. He also complained of loss of weight for 3 months and dyspnea on lying down for 1 week. On examination a 6X5 cm tender lump was palpable in the Right Paraumbilical region. Ultrasound was suggestive of Desmoid Tumor. FNAC showed malignant cells from adenocarcinoma. OGDscopy and Colonoscopy were normal. CECT abdomen showed mass in subcutaneous plane of RIF, with no bowel or solid organ lesions. Initial chest xray was normal. Repeat chest xray showed a left upper lobe opacity followed by CECT Thorax which showed mass lesion in the left upper lobe with multiple satellite nodules. Fibreoptic bronchoscopy showed intraluminal left bronchus lesion while bronchial biopsy was positive for poorly differentiated adenocarcinoma.

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DISCUSSION

Bronchogenic carcinoma is known globally as one of the most frequent malignancies with high mortality rate that can metastasize to several organs in the body, but more frequently to the hilar nodes, bones, brain, liver, and adrenal glands. Most common sites of soft tissue metastases from bronchogenic carcinoma are the chest, abdomen, head and neck. Metastatic tumor of abdominal wall are usually from colonic or gastric origin. Abdominal wall tumor as the first presentation of bronchogenic carcinoma is a rare entity.

CONCLUSION

Metastasis to soft tissue from lung carcinoma indicates poor prognosis. Primary presentation of bronchogenic carcinoma as an abdominal wall tumor is very unusual which is why this case report is being documented.

KEYWORDS : Abdominal wall adenocarcinoma, metastasis, bronchogenic carcinoma

INTRODUCTION

Tumors of the abdominal wall are divided into benign and malignant lesions which are composed of primary tumors and by the parietal invasion of intraabdominal tumors and metastatic parietal implants. Metastatic tumor of abdominal wall has an incidence of approximately 0.7–9%. Most common causes are secondary to neoplasms of colonic or gastric origin and implants of trocar holes, metastasis of lung origin is very rare.

Bronchogenic carcinoma is known globally as one of the most frequent malignancies with high mortality rate, about 19.4% deaths per year1. It can metastasize to several organs in the body, but more frequently to the hilar nodes, bones, brain, liver, and adrenal glands (2). However, metastases to skin, subcutaneous tissues and other soft tissues are uncommon (3). Overall prevalence of soft tissue metastasis from bronchogenic carcinoma is 2.3%4 while autopsy series have reported soft tissue metastasis of about 0.75–9% (5). Almost all histological types of carcinoma of the lung metastasize to the skin and subcutaneous tissues. This may at times be the first sign of bronchogenic carcinoma. Most common sites of soft tissue metastases from bronchogenic carcinoma are the chest, abdomen, head and neck6. The occurrence of soft tissue metastases from bronchogenic carcinoma is an indicator of a poor prognosis. (8)

CASE REPORT

A 54 year old male presented to surgical OP with complains of a lump in right lower abdomen for a period of 1month, that was insidious in onset, not associated with pain and constant in size. There was no history of fever or trauma. He did not have any complains related to bowel such as abdominal pain, vomiting, dyspepsia, constipation, diarrhea, melena, blood or mucus in stools, tenesmus. He noticed sudden increase in the size of the lump with sharp pain for past 1 week. No history of recent onset fever, or any bowel symptoms. Patient also gave a history of loss of weight for 3 months and dyspnea upon lying down for past 1 week. No history of cough or hemoptysis. He was a chronic smoker and occasional alcoholic, and did not have any comorbidities. No history of past surgeries or family history of malignancies.

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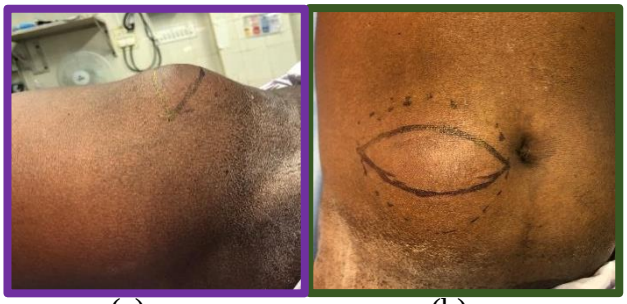
General examination: Patient vitals stable, moderately built and poorly nourished, ECOG score 1, pallor present, no icterus, no clubbing, no cyanosis, generalised lymphadenopathy present.

Local examination: 6X5 cm lump palpable in right paraumbilical region at the lower quadrant of the abdomen,hard,tender, mobile, nonpulsatile, Carnets test positive, cough impulse absent. No other mass palpable. No organomegaly. No ascitis. No inguinal lymph nodes. Hernial orifices normal. Per rectal examination within normal limits. Left level IV Cervical lymph node palpable 1x1cm. Bilateral multiple axillary lymph nodes palpable.



(a) (b)

Fig 1. Right Lateral (a) and Superior (b) view of abdominal wall lump

Chest – Clear, air entry equal bilaterally with normal vesicular breath sounds and no added sounds and Other systems examination were within normal limits.

He was taken up for an **Ultrasound abdomen** which showed an anterior abdominal wall mass in the right paraumbilical region 3.7x2.8x3.7cm in subcutaneous plane and muscular plane – s/o ?Desmoid tumor. . **FNAC** was taken from the abdominal wall lump which showed plasmacytoid cells with granular cytoplasm with vacuolation, pleomorphic vesicular nuclei, atypical mitotic figures and apoptotic bodies- positive for Malignant cells from Adenocarcinoma. His **Serum CEA** levels were 998.2 (normal <5). Based on the FNAC report and serum CEA levels, the most common primary sites for abdominal wall secondaries were kept in mind which are gastric and colonic and hence an **Upper GI Endoscopy** and a full length **Lower GI Endoscopy** was performed, both of which showed no lesions in the visualised areas of the gastrointestinal tract.

CECT Abdomen was done and it showed a Heterogenously enhancing lesion 4.7x4.5x5.2cm in Right Iliac Fossa region in subcutaneous plane. Inferior epigastric artery and vein seen prominent and supplying the mass and Heterogenous lesion 4.8x2.9cm in Left adrenal gland

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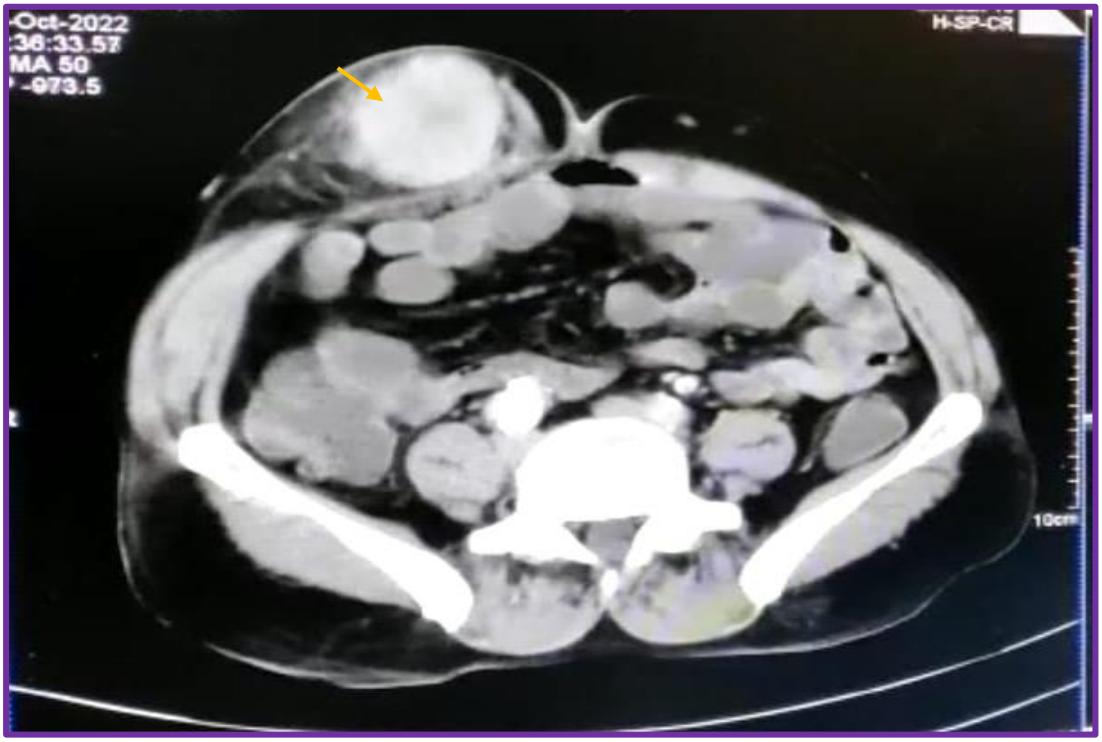

Patient was having progressive dypnea. Cardiology evaluation was done and was within normal limits. **Chest Xray** was repeated which showed a Left Upper Lobe Opacity

Proceeded with **CECT Thorax-**

- Heterogenously enhancing lesion 6.6x6.4x7cm in Left Upper Lobe extending to Left Hilum involving Left main pulmonary artery, encasing Left main bronchus, loss of fat plane with arch of aorta, with multiple satellite nodules, eroding 3rd rib posterior inner aspect.

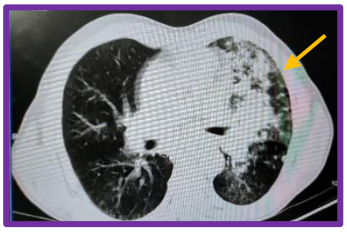

Fig 3. CECT Thorax

Pulmonology consultation was sought and advised for fibreoptic bronchoscopy.

Fibreoptic Bronchoscopy :

- Left Upper lobe bronchus narrowed by intraluminal lesion
- Extension to Left lower lobe bronchus, main carina and Right main bronchus

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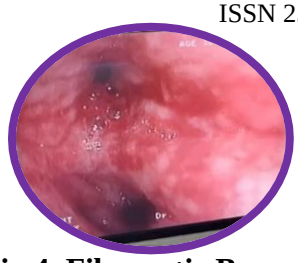


Fig 4. Fibreoptic Bronchoscopy

- **Bronchial wash cytology:**
  Smear positive for Adenocarcinoma
- **Bronchial Biopsy**:

  Poorly differentiated carcinoma, possibly Adenocarcinoma

In view of intolerable pain and impending ulceration, a decision to do wide local excision of the tumor was made. Patient preoperatively optimised and taken up for the same.

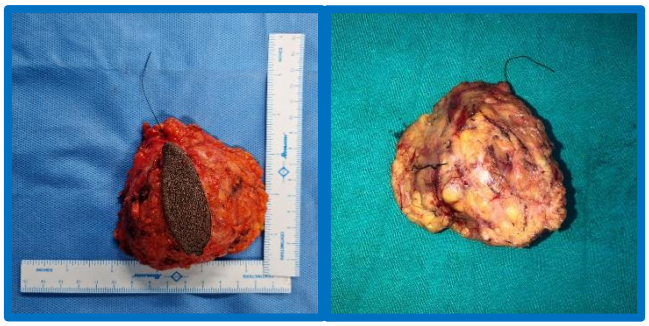
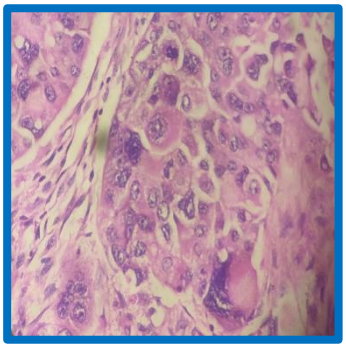


Fig 5. Wide Local Excision Specimen

Specimen was sent for histopathological examination which revealed poorly differentiated Adenocarcinoma



Granulated cytoplasm with pleomorphic vacuolated nuclei

Fig 6. Microscopy

Immunohistochemistry was performed that showed positivity for CK7

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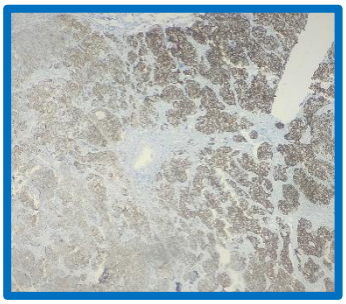

Fig 7. IHC CK7 +

Post operative period was uneventful and patient was referred to Surgical Oncology for Chemo-Radiotherapy.

DISCUSSION

Bronchogenic carcinoma is known globally as one of the most frequent malignancies with high mortality rate that can metastasize to several organs in the body, but more frequently to the hilar nodes, bones, brain, liver, and adrenal glands. Most common sites of soft tissue metastases from bronchogenic carcinoma are the chest, abdomen, head and neck. Metastatic tumor of abdominal wall are usually from colonic or gastric origin. Abdominal wall tumor as the first presentation of bronchogenic carcinoma is a rare entity.

Abdominal wall tumors are divided into benign lesions and malignant lesions [1]. The most frequent benign lesion that compromises the abdominal wall is endometriosis in women of childbearing age, presenting as a cyclically painful nodule located in the thickness of post-op scar. Treatment is a wide surgical resection with margins of healthy tissue in the surgical specimen to avoid recurrence [[2], [3], [4]].

Malignant lesions are composed of primary tumors and by the parietal invasion of intraabdominal tumors and metastatic parietal implants [1]. Among the primary tumors, the most frequent tumor is desmoid tumor, which corresponds to less than 3% of all soft tissue tumors and 0.03% of all neoplasms [5], which in the majority of the cases appear in young women, during pregnancy or followed by child-birth, which suggests a hormonal factor involved, also is associated with familiar adenomatous polyposis (Gardner syndrome) [6,7]. This lesion is followed by soft tissue sarcomas, which represent less than 1% of all malignant tumors, they are usually sporadic and of unknown etiology. Finally, there is dermatofibrosarcoma protuberans, which has an incidence of approximately 0.8–4.5 cases per million habitants per year, which corresponds to 1–6% of soft tissue sarcomas, which affects young male adults between 20 and 50 years [9,10]. All of the lesions mentioned above require a histological diagnosis made by a prior biopsy and an image ideally an magnetic resonance imaging (MRI) to plan surgical management, in which ideally a block resection should be performed in all cases [[6], [7], [8], [9]].

The incidence of metastatic abdominal wall lesions is approximately 0.7–9%, direct invasion and tumor implants in the abdominal wall can be due to tumors of various types and locations. The most common causes of metastasis in the abdominal wall is metastases of neoplasms of colonic origin, gastric origin, and in some cases and with the emergence of

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laparoscopic surgery, incidence of metastases in the implants of trocar holes has been reported from 0.7 to 1.3% [11]. Metastases from lung cancer are uncommon with a reported overall prevalence of 2.3%, the major sites of metastases include the liver (33–40%), adrenal glands (18–38%), brain (15–43%), bone (19–33%), kidney (16–23%) and abdominal lymph nodes (29%) [[11], [12], [13], [14]]. Currently, there are no reports in the literature of pulmonary adenocarcinoma coursing with abdominal wall metastasis. In the case of metastasis in the abdominal wall, the image of choice for the diagnosis and for the planning of surgical management is MRI, although a computed tomography scan (CT scan) can provide useful information. Also, in most of the cases a biopsy should be performed to confirm the diagnosis [[11], [12], [13], [14], [15], [16], [17]].

In this case, taking into account the intolerable nature of the pain over the abdominal lump despite adequate round the clock analgesics, and also impending ulceration, it was decided to perform a toilet surgery. A Wide Local Excision was performed with 1cm margin all around. Histopathology confirmed poorly differentiated adenocarcinoma with immunohistochemistry which was positive for CK7 which favour its pulmonary origin. Currently the patient is being followed up by surgical oncology with ongoing chemotherapy, with complete pain relief.

This case shows that abdominal wall metastasis from bronchogenic carcinoma although rare, should be taken into account and in some cases, patient can benefit only from a toilet surgery and palliative treatment, relieving the patient symptoms and improving the quality of life.

CONCLUSION

- Metastasis to abdominal wall from Bronchogenic Adenocarcinoma is a rare condition.
- Pre-Operative Imaging and Biopsy guides in the decision making of management optimum to patient care
- Toilet surgery is warranted in cases of pain and impending ulceration while adjuvant chemotherapy is the mainstay of treatment.

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