



SQUAMOUS CELL CARCINOMA OF OESOPHAGUS PRESENTING INITIALLY AS MULTIPLE SPINAL METASTASIS - AN UNUSUAL PRESENTATION AND REVIEW OF LITERATURE.

Histopathology

Radhika S*	Assistant Professor, Dept. Of Pathology, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India. *Corresponding Author
Janarthanan V	Senior Resident, Dept. Of Orthopaedics, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India.
Ilayaraja C	Senior Resident, Dept. Of Radiodiagnosis, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India.
Mariappan M	Professor And Head Of The Dept, Dept. Of Radiodiagnosis, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India.
Lavanya N	Assistant Professor, Dept. Of Medical Gastroenterology, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India.
Jamuna J	Assistant Professor, Dept. Of Pathology, Velammal Medical College Hospital And Research Institute, Madurai, Tamil Nadu, India.
Rajkumar R	Consultant Medical Oncologist, Dept. of Medical Oncology, Velammal Medical College Hospital and Research Institute, Madurai, Tamil Nadu, India.
Boon Mathew	Consultant, Nuclear Medicine, Krishna Advanced PET CT, Govt. Rajaji Hospital Campus, Madurai.

ABSTRACT

Oesophageal carcinoma presenting as spinal metastasis is rare accounting for ~1-14% and indicates a poor prognosis. Herein, we report an exceedingly rare case of spinal metastasis of an oesophageal squamous cell carcinoma who presented with low back ache which was the initial presentation. A 60 year-old man presented with low back ache since 5 months. MRI lumbar spine showed multiple vertebral lesions - skeletal metastasis and omental metastasis. Biopsy from D9 vertebral level showed features of well differentiated squamous cell carcinoma. PET- CT showed metabolically active soft tissue thickening noted involving the cardia of the stomach and lower thoracic oesophagus - ?primary site. Metabolically active multiple adenopathy, omental deposits, multiple lytic skeletal lesions and hypodense liver lesions were noted. Upper gastrointestinal tract (GI) endoscopy and biopsy from the lesion in lower oesophagus showed features of moderate to poorly differentiated squamous cells carcinoma. Palliative chemotherapy was initiated and the patient is on follow-up. This case emphasizes that oesophageal carcinoma can present with bone pain as an initial symptom due to skeletal metastasis. Though rare, skeletal metastasis could be the initial presentation of an underlying malignancy and it requires a multidisciplinary approach.

KEYWORDS

INTRODUCTION

Oesophageal carcinoma presenting as spinal metastasis is rare accounting for ~1-14% and indicates a poor prognosis¹. Herein, we report an exceedingly rare case of spinal metastasis of an oesophageal squamous cell carcinoma who presented with low back ache which was the initial presentation. A 60 year-old man presented with low back ache since 5 months. MRI lumbar spine showed multiple vertebral lesions - skeletal metastasis and omental metastasis. Biopsy from D9 vertebral level showed features of well differentiated squamous cell carcinoma. PET- CT was done which showed a soft tissue thickening noted involving the cardia of the stomach and lower thoracic oesophagus, hence endoscopy and biopsy from the lesion in lower oesophagus was done which showed features of moderate to poorly differentiated squamous cells carcinoma. Palliative chemotherapy was initiated and the patient is on follow-up. This case emphasizes that oesophageal carcinoma can present with bone pain as an initial symptom due to skeletal metastasis.

Case History:

A 60 year old male presented with complaints of low back ache since 5 months. MRI lumbar spine showed multiple vertebral lesions - multifocal skeletal metastasis and omental soft tissue lesion - metastatic lesions. Multiple enlarged hepatic, periportal, left gastric and upper paraaortic lymphnodes were noted - metastatic deposits (Fig: 1). CT guided biopsy from D9 vertebral level showed features of squamous cell carcinoma. Biopsy from D9 vertebral level showed features of well differentiated squamous cell carcinoma (Fig 2&3). PET- CT showed metabolically active soft tissue thickening noted involving the cardia of the stomach and lower thoracic oesophagus - ?primary site (Fig 4&5). Metabolically active multiple adenopathy, omental deposits, multiple lytic skeletal lesions and hypodense liver lesions were noted. Upper gastrointestinal tract (GI) endoscopy was done which showed an ulceroproliferative lesion in the lower oesophagus (Fig: 6) and biopsy was done from the same lesion which showed features of poorly differentiated squamous cells carcinoma.

The patient was referred to Medical Oncology and has 1 cycle of DCF regimen, Inj. Docetaxel, Inj. Carboplatin and Inj. 5 Fluorouracil with Inj. Filgrastim on Day 4,5&6. The patient is awaiting the second cycle of chemotherapy.

DISCUSSION:

As per the World Health Organization (WHO), Globocan 2018, oesophageal cancer is the 7th most common cancer in the world and 6th most common cause of cancer related mortality². Oesophageal carcinoma usually presents with complaints of dysphagia, unexplained weight loss, retrosternal pain, etc³. Oesophageal carcinoma with skeletal metastasis as an initial presentation is rare as skeletal metastasis usually occurs at later stages. The incidence of distant metastases from a newly diagnosed oesophageal carcinoma has been reported as approximately 18%⁴. Skeletal metastases is uncommon with a reported rate varying from 1% to 14% in autopsy series. Several autopsy series reported that the common sites of metastasis of oesophageal carcinoma are abdominal lymph nodes (45%), liver (35%), lung (20%), cervical & supraclavicular lymph nodes (18%), bone (9%), adrenal glands (5%), peritoneum (2%) and brain (2%). Skeletal metastasis in oesophageal carcinoma was more prevalent in males.

The average age of presentation was 58.0 ± 5.3 years (range 51–67 years). Most of the patients of oesophageal carcinoma presented with skeletal metastasis within one year after the resection of the primary lesion and the incidence rate decreases thereafter. The hypothesis of skeletal metastasis in oesophageal carcinoma could be due to the following reasons. The oesophageal vein merges into the azygos vein and hemiazygos vein, which is connected to the intercostal and vertebral vein systems, and the spinal venous system is lacking. The slow blood flow in this venous system and increase in intrathoracic and intraabdominal pressure causes the tumor embolus in the thoracic and abdominal cavity to enter the vertebral venous system directly without passing through the lung and liver leading to metastatic deposits.

The other reason is that the thoracic vertebra is adjacent to the oesophagus which lead to metastatic deposits⁵⁻⁶. Till 2007, 5 cases were reported in literature in which skeletal metastasis, presenting as bone pain was the initial presentation in oesophageal carcinoma. Quint et al., studied 838 newly diagnosed of esophageal carcinoma cases by CT scan, plain radiographs and bone scan and showed 18% had metastases of which only 1.6% involved bone⁷. In a study by Rezaee et al., who studied 550 cases of oesophageal carcinoma over a period of 14 years, 5 cases of oesophageal carcinoma presented initially as bone metastasis, of which 2 cases had multiple bone metastasis and 3 cases had solitary bone metastasis⁸. In a retrospective study done over a period of 10 years in China, Xi Zhou et al., amongst 1000 patients with metastases, only 6 patients had metastasis which originated from esophageal carcinoma⁹. The spine, especially the thoracic vertebra is the most common site for bone metastases in esophageal carcinoma and the pattern on bone destruction in esophageal carcinoma were predominantly lytic and rarely sclerotic. The treatment of metastatic spinal oesophageal carcinoma involves a multidisciplinary approach which includes palliative radiotherapy, chemotherapy, and bisphosphonates which helps in control of local lesions, reduces pain, prevents fractures, and thereby improves the quality of life. The current patient was initiated on palliative chemotherapy and is on follow-up. Patients with oesophageal carcinoma and spine metastases have a poor prognosis, and the average survival time of these patients usually does not exceed 12 months and is associated with increased risk of skeletal related events like pathological fracture, spinal cord compression, cauda equina syndrome, pain, paraplegia, etc. with additional added risk of pneumonia, deep vein thrombosis, pulmonary embolism, etc. which can shorten the life span⁹. The current case is unusual as the patient did not have any complaints like dysphagia, dysphonia, retrosternal pain, etc. pertaining the lower oesophageal carcinoma, rather presented with low back ache. Involvement of lumbar spine is unusual in oesophageal squamous cell carcinoma, moreover this patient has metastasis in unusual sites like humerus, etc.

CONCLUSION:

Any old age patient with low back ache, metastatic carcinoma needs to be included in the differential diagnosis and warrants necessary investigations including biopsy to ascertain the exact etiology. Though, oesophageal carcinoma presenting with skeletal metastasis is rare, it can occur and requires a multidisciplinary approach for the proper management.



Fig 1: MRI Lumbar spine showing multiple vertebral lesions

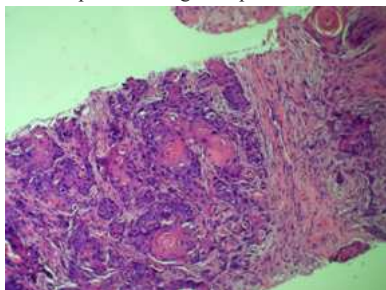


Fig 2: Biopsy showing squamous cell carcinoma with keratin pearls (H&E at 100x)

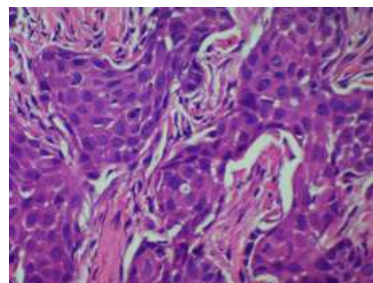


Fig 3: Biopsy showing large polygonal cells with evidence of individual cell keratinisation and mitotic figure (H&E at 400x)



Fig 4: Axial image showing lower esophageal wall thickening.



Fig 5: Coronal image showing lower esophageal wall thickening with mediastinal node and few skeletal lesions.



Fig 6: Upper Gastrointestinal (GI) Endoscopy showing lesion in the lower esophagus.

REFERENCES:

1. Moses LF. Squamous cell carcinoma of the esophagus: Natural history, incidence, etiology, and complications. *Gastroenterology Clinics of North America*. 1991 Dec 1;20(4):703-16.
2. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*. 2018 Nov;68(6):394-424.
3. Abbas H, Ghazanfar H, UI Hussain AN, Baiomi A, Ihimoyan A. Atypical presentation of esophageal squamous cell carcinoma masquerading as diffuse severe esophagitis. *Case Reports in Gastroenterology*. 2021 Sep 42;15(2):533-8.
4. Lim DH, Im YH, Ji SH, Park BB, Oh MJ, Lee J, Park KW, Lee SH, Park JO, Kim K, Kim WS. Esophageal squamous cell carcinoma recurring as a solitary renal mass. *Cancer research and treatment: official journal of Korean Cancer Association*. 2004 Aug 31;36(4):271-4.
5. Katayama A, Mafune KI, Tanaka Y, Takubo K, Makuuchi M, Kaminishi M. Autopsy findings in patients after curative esophagectomy for esophageal carcinoma. *Journal of the American College of Surgeons*. 2003 Jun 1;196(6):866-73.
6. Mandard AM, Chasle J, Marnay J, Villedieu B, Bianco C, Roussel A, Elie H, Vernhes JC. Autopsy findings in 111 cases of esophageal cancer. *Cancer*. 1981 Jul 15;48(2):329-35.
7. Quint LE, Hepburn LM, Francis IR, Whyte RI, Orringer MB. Incidence and distribution of distant metastases from newly diagnosed esophageal carcinoma. *Cancer*. 1995 Oct 1;76(7):1120-5.
8. REZAEI H, BARADARAN RM. Squamous cell carcinoma of esophagus presenting as bone metastases in five cases.
9. Zhou X, Liu S, Huo Z, Yao S, Wang Y, Liu Y. Clinical characteristics and surgical treatment of esophageal cancer spinal metastasis—A single center 10-year retrospective study. *Clinical neurology and neurosurgery*. 2020 Oct 1;197:106071.