

Inexplicable Abdominal Pain in a Patient with Advanced Recurrent Osteogenic Sarcoma: A Case Report

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ABSTRACT

Abdominal pain is one of the most common causes of emergency department visits. Comprehensive patient assessment is required to identify the cause of abdominal pain. The origin of abdominal pain can be intra-abdominal or extra-abdominal. The majority of the cases with abdominal pain will have typical symptoms, suggesting intra-abdominal pain. A small subset of patients has atypical symptoms suggesting an extra-abdominal cause for the pain. Reports suggest that patients who presents with pain in the abdomen have the primary aetiology from the spinal column. This case report presents a 32-year-old male patient, with abdominal pain in advanced, recurrent Osteogenic Sarcoma (OGS) with spinal metastasis as the primary aetiology. Compression of nerve roots due to spinal bony metastasis lead to abdominal pain in the present case. Even though it was of spinal origin, clinically it mimicked to be of abdominal origin, so oncologists have to be vigilant in considering the rare causes of abdominal pain. Detailed history and clinical examination of the patients is ideal approach to identify the cause.

Keywords: Pain management, Palliative care, Quality of life

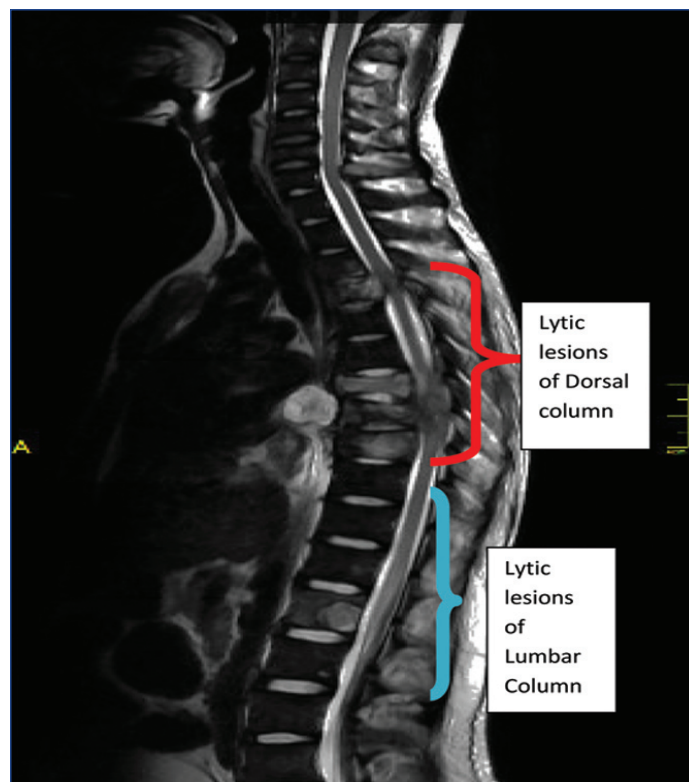
CASE REPORT

The Medical Oncology department referred a 32-year-old male patient, a tobacco chewer and beedi smoker (10 years) with lower socio-economic status, to the pain and palliative care department. His chief complaint was lower abdominal pain (umbilical and peri umbilical region). Upon detailed evaluation, the pain was dragging and pricking type over the adjacent areas of the umbilicus. He scored his pain 8/10 on the Visual Analog Scale (VAS) score. The pain was present for one month, gradual onset, and progressive. For the last two weeks, the pain had increased. His pain increased during sitting and standing for his routine work for long. The pain was continuous in nature, disturbing his sleep in the past two weeks and significantly affecting his quality of life. He had a history of passing hard stools for three days. There was no history of nausea, vomiting, or urinary complaints. There was no history of abdominal surgery in the past. The patient also complained of pain in the lower back (since three weeks), VAS 5/10, dull aching type of pain. History suggested he was operated on for OGS of proximal humerus 1.5 years back. He also had received chemotherapy before surgery for his disease.

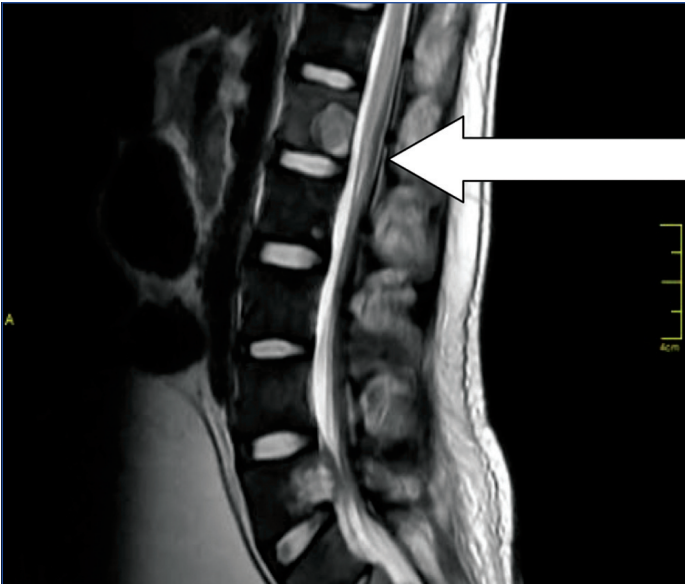
The patient was an average-built adult who was depressed and irritable due to his pain on physical examination. The examination revealed rigidity in both the iliac region and hypogastric region. The sensory examination over the abdominal wall was normal. There was no increase in pain with cough. There was no distension. Due to rigidity expressed by the patient, organomegaly could not be appreciated. Auscultation revealed normal bowel sounds. There was mild spinal tenderness. Digital rectal examination was normal. Systemic examination of other sites was uneventful. A provisional diagnosis of pain of abdominal origin was made. The initial pain management had anti-spasmodic (hyoscine butylbromide) thrice a day and non steroidal anti-inflammatory drugs (ibuprofen+paracetamol) thrice a day along with antacids (pantoprazole) once a day.

Laboratory tests like complete blood count, renal and liver function tests, erythrocyte sedimentation rate, C reactive protein, serum electrolytes, serum lipase, and amylase were normal. Electrocardiography monitoring showed no abnormalities. The patient was further subjected to Computed Tomography (CT) of his thorax, abdomen, and pelvis to look for the disease status. There was no visceral

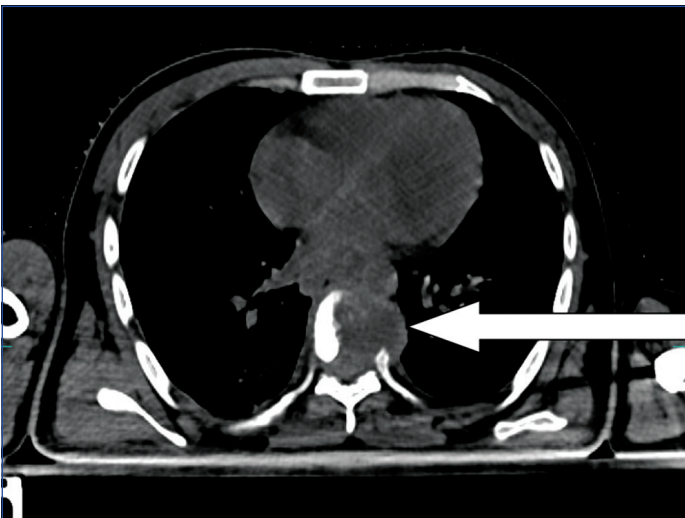
metastasis in the lungs, liver, or other organs; however, florid skeletal metastatic deposits in the dorsal spine, lumbar spine, sacral spine, right femur, and left sacrum were noted. Lytic lesions were over D3, D4, D7, D8, D9, L1, L3-5, S1, and S2 [Table/Fig-1]. Of these lytic lesions, the most significant lesion was of the spinal process and body of L1 {Size of lesion was 12.1 mm³; 8.2 mm³; significant nerve compression (By definition, the size of lesion more than 8 mm along with nerve compression more than 50% in the scan) was seen} [1]. Magnetic resonance imaging of the whole spine revealed the lesions specifically causing the symptoms [Table/Fig-2]. Axial imaging of the L1 lesion showed destruction of the body and spinal process causing compression of the nerve root [Table/Fig-3].



[Table/Fig-1]: Magnetic resonance imaging of spinal lesions.



[Table/Fig-2]: Magnetic resonance imaging of L1 lesion (Largest).



[Table/Fig-3]: Axial image of L1 lesion showing destruction of body and spinal process.

After the imaging evaluation, a final diagnosis of referred abdominal pain of spinal origin secondary to bony metastasis of OGS was made. Hence, the pain management course was changed to narcotics (morphine 10 mg every four hours), steroids (dexamethasone) thrice a day, antiemetic prokinetic agent (metoclopramide), laxatives (sodium picosulfate+liquid paraffin+milk of magnesia), and antacids (pantoprazole). He was further referred to the radiation oncology department for palliative radiotherapy, and was planned for bisphosphonate therapy in further follow-ups. These medications were given for 15 days. On follow-up, the patient was having pain of 2/10 on the VAS scale and was comfortable in terms of his sleep and other routine activities.

DISCUSSION

Pain in the abdomen is the single most crucial symptom that hampers cancer patient's quality of life [2]. Abdominal pain is one of the most common causes of emergency department visits (4-5%) [3-5]. It is also the most common cause of admissions in palliative care patients [6,7]. Comprehensive patient assessment is required to identify the cause of abdominal pain. The origin of abdominal pain can be intra-abdominal or extra-abdominal. The majority of the cases with abdominal pain will have typical symptoms, suggesting intra-abdominal pain [8]. A small subset of patients has atypical symptoms suggesting an extra-abdominal cause for the pain. Reports suggest that patients presented with pain in the abdomen with the primary aetiology from the spinal column [9-14]. Diagnostic uncertainty and risk of representation are two factors that make

abdominal pain a problematic symptom [14,15]. Referred pain to various sites in the body can be understood on the basis of the dermatomal distribution of the nerves. The incidence of referred pain in cancer patients was between 8-20% in various studies [16-19].

In a general overview idea, abdominal pain can be somatic (parietal) pain, visceral pain, or referred pain [20]. In the present case report, the patient had rigidity on per abdominal examination, which was gave the impression that the pain was of somatic origin [20-22]. A dragging type of pain in and around the umbilical region in index patient seemed to be a pointer towards lesion in the urinary bladder, kidney, or lower bowel (visceral) [23]. A third reason explains abdominal pain, which is categorised as referred pain. Referred pain is pain that is felt away from the site of origin. It is because of the common anatomical origin or same nerve root innervations [24]. Ruch's convergent-projection theory reports that afferent visceral sensory pain fibres and somatic fibres enter the same spinal dorsal root ganglia segments of the spinal cord, causing misinterpretation by the central nervous system about the origin of the pain [24,25].

The present case had the most significant lytic lesion of the L1 spinal process and body metastasis which was compressing the nerve root, causing lower abdominal pain. Previous reports of thoracic tumours, schwannoma, and meningioma of the spinal cord have reported similar findings [11-13]. A course of steroids and escalating the pain medications to narcotics relieved his pain completely, suggesting the origin of pain was spinal metastasis and not intra-abdominal. But, it is also important to note that a minor proportion of patients will have abdominal pain, which is of extra-abdominal origin. Therefore, detailed history, physical examination of the patient presented with abdominal pain, and appropriate investigations are crucial in identifying the cause and proper management of the patients.

CONCLUSION(S)

In the present case, abdominal pain in and around the umbilical region was of spinal origin. Bony metastasis in the spinal column can lead to compression of nerve roots and present as abdominal pain. Clinicians have to be vigilant in identifying such causes. Early identification and prompt treatment will benefit the patients in improving their quality of life.

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