Intestinal obstruction due to ileal metastasis of Ewing's sarcoma

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We present a case report of intestinal obstruction caused by ileal metastasis of Ewing's sarcoma. The invasive tumoral segment of the ileum was removed and the bowel continuity was provided with end-to-end anastomosis. Histopathologic examination showed tumoral invasion of the ileal mucosa and ileal wall by small blue round cells of Ewing's sarcoma. ***Ann Pediatr Surg*** **13:170–171 © 2017 Annals of Pediatric Surgery.**

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Introduction

Sarcoma is the cancer of the transformed mesenchymal cells. Sarcomas can arise in bone, cartilage, muscle, fat, connective tissues, or peripheral nerves. Ewing's sarcomas are mesenchymal malignancies originating from neuroectodermal tissue. They originate from unique mesenchymal stem cells. Ewing's sarcoma was first described by Lücke [1]. The first histopathologic definition was made by James Ewing in 1921 [2].

Histopathologically, small round blue-cell infiltration is typical view for Ewing's sarcomas. Ewing's sarcomas can be roughly classified as osseous and extraosseous. Although extraosseous Ewing's sarcoma is very rare, osseous Ewing's sarcoma is the second most common malignant bone tumor in children and young adults.

There is a slight male predominance. Osseous Ewing's sarcomas are generally detected within the first two decades of life with existing distant metastasis in 25% of cases. The prognosis of patients with metastatic disease is poor.

Case report

A 13-year-old male patient with metastatic osseous Ewing's sarcoma originating from the femoral bone consulted the hospital on account of developing ileus following cranial metastasectomy operation. Abdominal plain radiography showed multiple intestinal air–fluid levels (Fig. 1). Computed tomographic examination did not show the cause of the bowel obstruction. In laboratory tests, a mild anemia and high lactate dehydrogenase levels were detected.

He was operated due to progression of the clinical status. Abdominal exploration revealed a tumoral mass localized in the 7–8-cm segment of the ileum as a source of bowel obstruction (Fig. 2a and b). There were prominent macroscopic features in the tumoral ileal segment such as subserosal hematoma and ischemic changes.

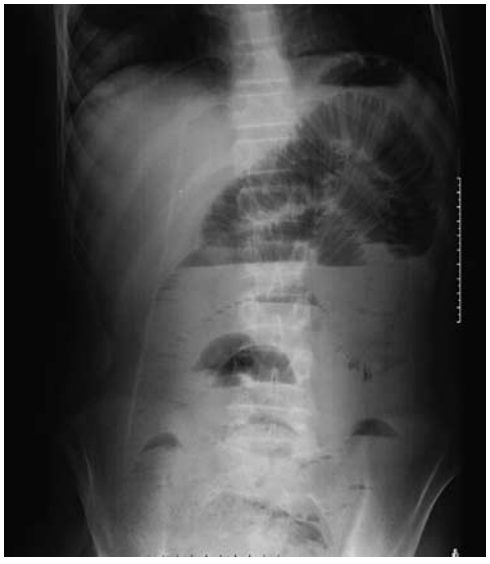
There was notable tumoral involvement in the mesenteric lymph nodes adjacent to the invasive bowel segment.

Tumoral metastasis was not detected in other intra-abdominal organs and tissues. Tumoral ileal segment was resected and bowel continuity was re-established. The patient was uneventfully discharged on the fifth post-operative day. Pathologic investigation identified the ileal mucosa and wall infiltration with blue, small, round tumoral cells of Ewing's Sarcoma (Fig. 3). In immunohystochemical study, CD 99 antigen was found as positive in tumoral cells.

Discussion

When Ewing's sarcoma is diagnosed, metastasis is present in ~25% of patients. Intra-abdominal or intestinal metastasis of osseous Ewing's sarcomas is very rare. The most frequent metastasis occurred in the lungs and bone marrow by initial hematogen passage. In addition, central nervous system and intra-abdominal osseous Ewing' sarcoma metastases were also observed. Extraosseous Ewing's sarcomas originate from the omentum, mesocolon, liver, and small intestine. Reports of intestinal extraosseous Ewing's sarcoma can be found in literature [3,4]. Osseous Ewing's sarcomas mostly metastasize

Fig. 1



Intestinal air–fluid levels depending on ileal metastatic obstruction of Ewing's sarcoma on plain abdominal radiography.

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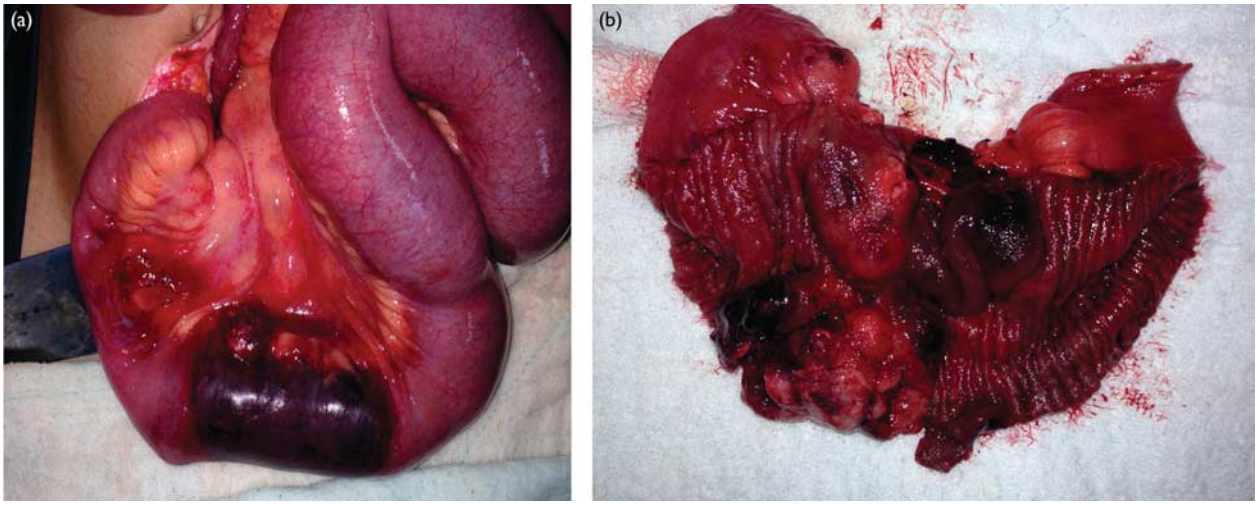
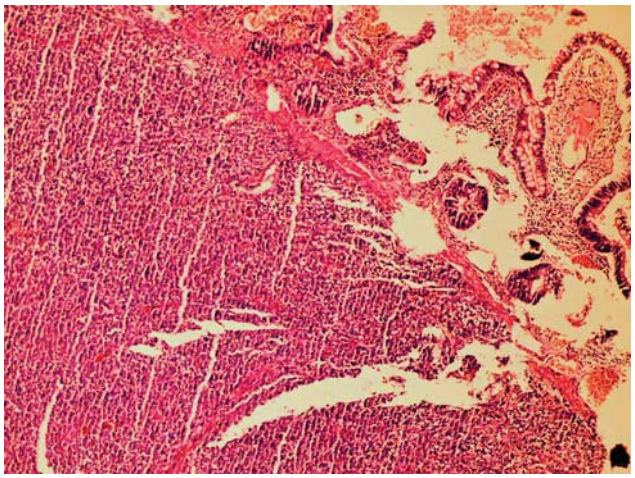
Fig. 2



(a) Ileal metastasis of osseous Ewing's sarcoma. (b) Ileal metastasis of osseous Ewing's sarcoma.

Fig. 3



Intestinal mucosa infiltrated by small rough blue cells of Ewing's sarcoma in hematoxylin and eosin stain.

in the liver, omentum, and lymph nodes intra-abdominally. Intestinal metastasis of osseous Ewing's sarcoma is very rare [5]. Our case is one of the very rare reports of osseous Ewing's sarcoma metastasizing in the ileum.

Conflicts of interest

There are no conflicts of interest.

References

1 Lücke A. Contributions to the theory of the growth. *Wirchowc Arch* 1866; **35**:524–529.
2 Ewing J. A review of the classification of bone tumors. *Surg Gynecol obstet* 1939; **68**:971–976.
3 Shek TW, Chan GC, Khonq PL, Chung LP, Cheung AN. Ewing sarcoma of the small intestine. *J Pediatr Hematol Oncol* 2001; **23**:530–532.
4 Boehm R, Till H, Landes J, Schmid I, Joppich I. Ileoileal intussusception caused by a Ewing sarcoma tumour. An unusual case report. *Eur J Pediatr Surg* 2003; **13**:272–275.
5 Capitini CM, Derdak J, Hughes MS, Love CP, Baird K, Mackall CL, Fry TJ. Unusual sites of extraskeletal metastases of Ewing sarcoma after allogeneic hematopoietic stem cell transplantation. *J Pediatr Hematol Oncol* 2009; **31**:142–144.