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Inflammatory myofibroblastic tumor of the small intestine: A case report

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Abstract

Introduction

Inflammatory myofibroblastic tumor (IMT) is a rare benign tumor. Usually seen in children and adolescents, this inflammatory tumor can affect all the organs.

Presentation of case

In this case, a five-year-old child experienced the sudden onset of symptoms and the enlargement of abdominal mass 20 days before referral. The patient did not have any symptoms of nausea, vomit, and abdominal pain. In the laparotomy, a large and sticky solid mass, attached to the ileum with the mesenteric origin, sized 10 × 8 cm was observed and completely resected.

Discussion

This tumor rarely emerges in the small intestine, and there are a few patients with intestinal manifestation. In this case report, the tumor had an origin of the small intestine mesenteric and it had invaded to the ileum.

Conclusion

Despite using some radiographic methods such as medical ultrasound and computerized tomography (CT) scan to diagnose the disease, the definitive diagnosis is merely possible thorough complete surgical resection.

Keywords: Inflammatory myofibroblastic tumor, Small intestine, Computerized tomography, Case report

1. Introduction

Inflammatory myofibroblastic tumor (IMT) emerges as a pseudotumor with malignant manifestation [1]. This inflammatory tumor is usually seen in children and adolescents. It can affect all the body organs [2]. The most common localization of this tumor is in the lungs, Mesentery comes in the second place [3]. The pathogenesis of this inflammatory tumor cannot be accurately recognized [4]. The manifestation of disease is variable with respect to the involved organ, and the compressive effects of tumor are generally important [5]. The definitive diagnosis of this tumor is possible through surgery and pathology, and the removal of symptoms usually requires the resection of the mass [6].

The case report was a five-year-old child who started to experience the sudden symptoms 20 days before

referral.

2. Presentation of case

Without any hospitalization records, the five-year-old male patient was the first child of his mother. The patient was hospitalized after experiencing an abdominal mass 20 days before referral. His mother did not mention any records of taking any particular medicine during pregnancy or breastfeeding period. According to the patient's mother, he did not have any symptoms of nausea, vomiting, and abdominal pain. There were no changes in bowel habits. The patient sometimes complained about a fever. Weight loss, loss of appetite, and night sweats were not mentioned recently.

On examination, the child was not pale. He was conscious. The mass was mobile at the midline without tenderness and erythema. It was sized 10 × 8 cm. The medical ultrasound indicated a mass sized 10 × 8 cm in the abdominal cavity. Observed in the abdominal cavity, the mass was extended from below the pancreas to the pelvic cavity. The calcified areas of its tissues were observed along with the relative vascularity inside it. According to laboratory studies, the patient did not have leukocytosis, and other indices were in the normal range.

Considering sonographic evidence and the chance of myofibroblastic tumor or neuroblastoma, a surgical resection was performed on the patient. It was done after prep and drape under sterile conditions with a transverse incision of right upper quadrant (RUQ) classic laparotomy. The patient's abdomen was explored, and the large and sticky solid mass attached to the ileum with the mesenteric origin sized 10 × 8 cm was observed. The tumor was extracted from the abdomen with the expansion of incision. Diffuse mesenteric lymphadenopathy was seen. The tumor was invaded to the ileum 20 cm away from ileocecal valve. It was resected with almost 20 cm of the small intestine attached to it, and an end-to-end anastomosis was performed at 10 cm from the ileocecal valve. Mounting was done, and mesentery was restored. The mass was surgically resected with the doubt of malignancy (Fig. 1). After that, the abdomen was irrigated and repaired layer by layer.

In the microscopic investigation of slices taken from the sent sample in three containers, the first container, named abdominal mass, included two slices of the small intestine, which were 27 cm in total and 2.6 cm at the thickest part. Attached to the mass, it was sized 8 × 13 × 15 cm in the soft consistency slice and Myxoid level with a tornado view. In the lymph nodes cut, the thickest part was observed 2.5 cm. The second container, named biopsy of mesentery, included a cream brown piece of the soft tissue sized 1 × 0.5 × 1.5 cm in the soft consistency slice and the cream cross section. The third container, named appendix, was 4.5 cm long and 0.7 cm thick with a bright serous level (Fig. 2).

In the microscopic investigation of the slices taken from the sent sample, a wall of the small intestine and adipose tissue were observed. The proliferation of spindle cells and star-looking ones were seen with eosinophilic neoplasm in vascularized myxoid stroma in the wall of the intestine and adipose tissue. The abundant infiltration of plasmocytes was sometimes specified with two cores with lymphocytes. Eosinophils rarely drew attention. The lymph nodes were seen with reactive hyperplasia. In the second container, small unmarked lymph nodes of malignancy were observed. The third container indicated the cross section of the Appendix without pathologic morphology. Finally, the pathologic diagnosis of the IMT was reported by the first container.

3. Discussion

IMT is a rare benign tumor [7]. It is usually seen in children and adolescents aged between 2 and 16 years old [8]. The case report patient was in this age range. The chance of emerging this kind of tumor has been reported to be higher in girls compared with boys [9]. It is possible that all the body organs can be affected by this tumor. The most affected organs include pulmonary system, mesentery and Omentum [10]. Given the extent of the affected area and the kind of affection, this tumor is identified with different terminologies such as inflammatory pseudotumor, inflammatory fibroid tumor, eosinophilic granuloma, or plasma cell granuloma [11].

However, this tumor rarely emerges in the small intestine, and there are a few patients with intestinal

manifestation [12]. In this case report, the tumor had an origin of the small intestine mesenteric and it had invaded to the ileum.

The clinical manifestations of patients are different with respect to the affected organ [12], although manifestations are rapid and progressive in intestinal involvements accompanied by symptoms such as weight loss or the emergence of a mass [8].

The cause of the disease is still unknown [6]. There are many reports on the cause of this tumor. One of such reports can be the positive EBV test [11].

It is sometimes difficult to distinguish IMT from advanced malignant tumors mainly because the mass imitates malignant tumors [8]. The initial diagnosis can be done with some laboratory markers or primary radiography; however, surgical resection and transfer of pathologic samples would have an important role in the diagnosis of this kind of tumor compared with other similar cases [12]. All the patients undergoing surgical operations were advised long-term follow-ups in order to investigate the risk of recurrence [5].

4. Conclusion

Despite using some radiographic methods such as medical ultrasound and computerized tomography (CT) scan to diagnose the disease, the definitive diagnosis is merely possible thorough complete surgical resection. The final confirmation is also based on the results reported from the sample sent for pathology.

Conflicts of interest

None.

Ethical approval

There was no ethics approval required for this case report.

Funding

None.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author contribution

A. Amouei: involved with the patient during admission and surgery. F. Ehsani: co-author, involved with the patient at time of surgery and during admission. M. Vaghefi: author of case report, involved with the patient during admission. S. M. Tabatabai: co-author, involved with the patient at time of surgery and during admission. P. Yazdian-anari: author of case report, involved with the patient during admission.

Guarantor

Abdolhamid Amoui.

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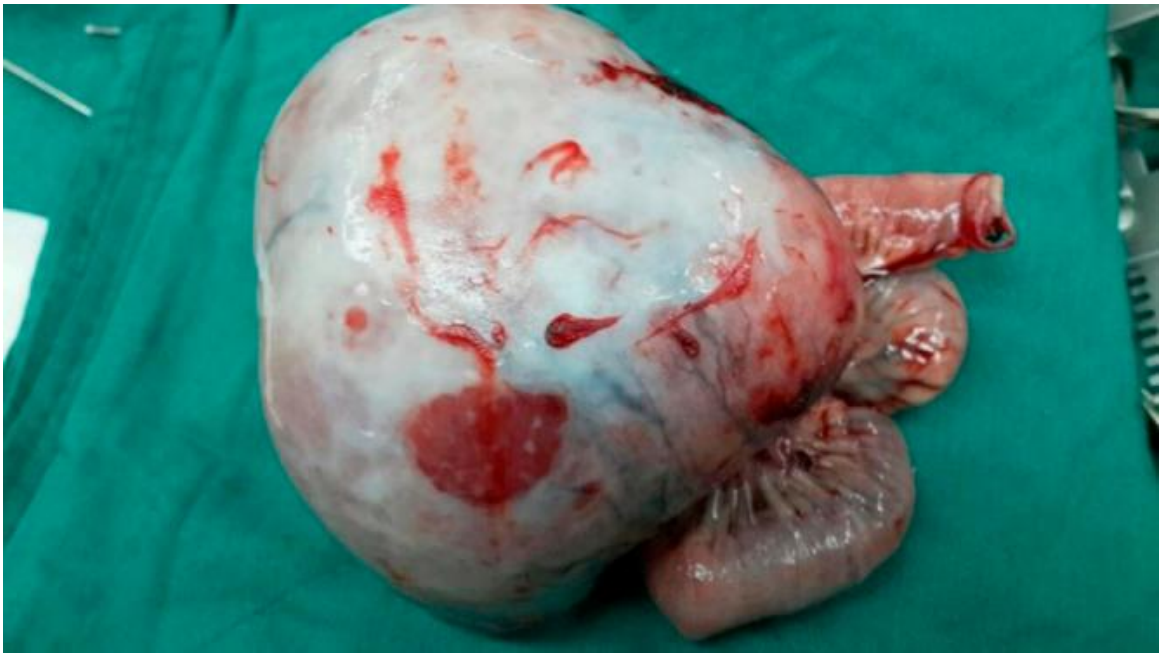
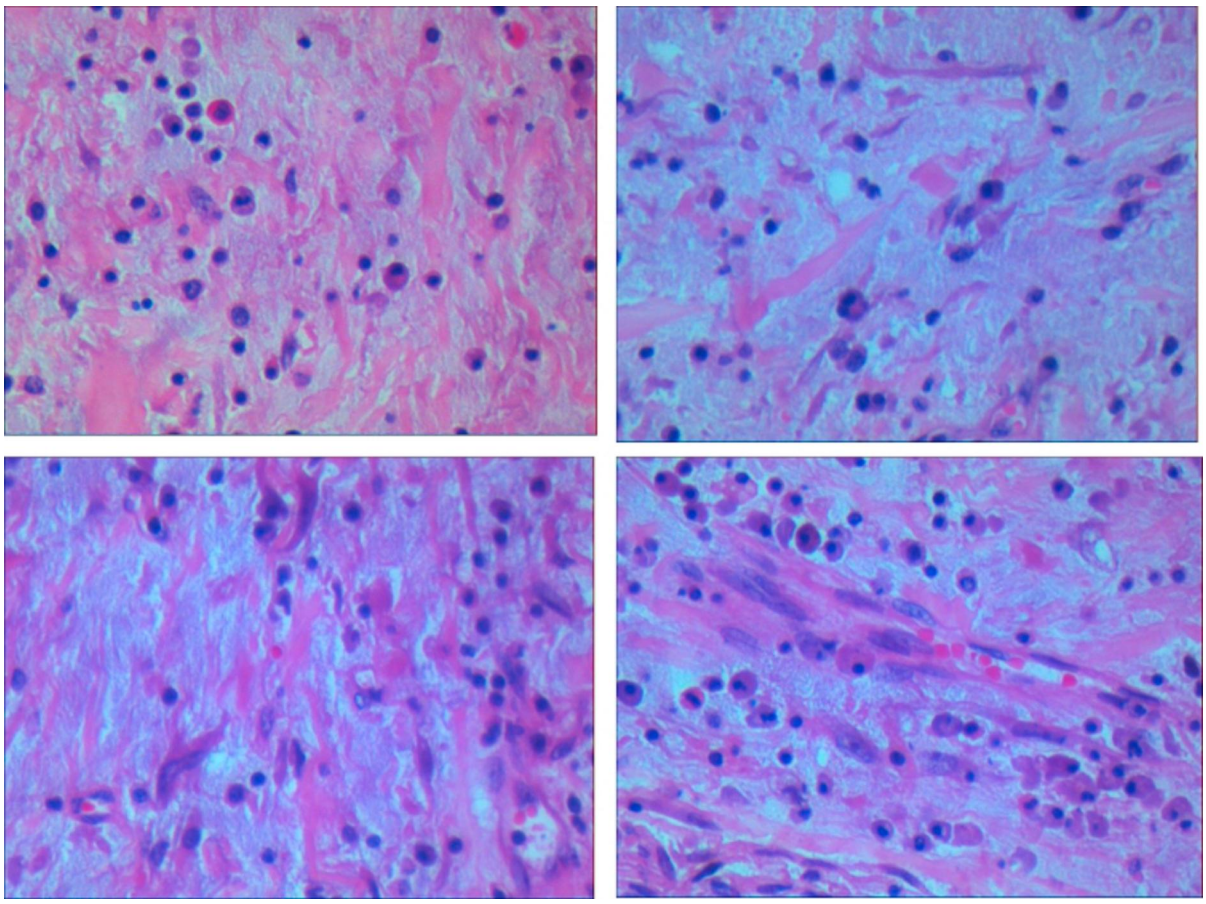
Figures and Tables

Fig. 1



10 × 8 cm tumor of a 4-year-old child after 20 cm resection of his ileocecal valve.

Fig. 2



H&E color stains that show inflammatory fibrosis of tumor tissue. Myxoid stroma star-like cell with eosinophilic cytoplasm and plasmocyte infiltration.