Mature Jejunal Teratoma in adolescents: A case report

N Wisnu Sutarja, MD, Ariandi Setiawan, MD, Fendy Matulatan, MD

Pediatric Surgery Division, Department of General Surgery, Medical Faculty of Airlangga University, Dr. Soetomo Hospital, Surabaya, Indonesia

SUMMARY
Jejunal teratoma (JT) is a rare type of extragonadal teratoma. To date, the subject of mature jejunal teratomas has not yet been discussed in the literature. This type of teratoma contains cystic, solid, and calcified components. JT may be suspected on a computed tomography (CT) scan, which can describe the various features of the germinal layer components, followed by normal laboratory results of alpha feto protein (AFP) and β-human chorionic gonadotropin (β-hCG). This case report describes that of a teenager with a mature JT whose chief complaints were recurrent general weakness due to anemia and an abdominal mass. The patient was initially treated with non-operative management; however, his symptoms remained unresolved, and he accepted surgical intervention. No additional chemotherapy or radiotherapy was required after complete tumor excision. The patient no longer complained of general weakness following surgery.

INTRODUCTION
Jejunal teratomas (JT) are very rare neoplasms, and no publication discussing this type of tumor is yet available. JT contain cystic, solid, and calcified components. This type of tumor may be suspected on a computed tomography (CT) scan, which can describe the various features of the germinal layer components, followed by normal laboratory results of alpha feto protein (AFP) and β-human chorionic gonadotropin (β-hCG). In this report, we discuss the case of a teenager with a mature jejunal teratoma.

CASE REPORT
A 15-year-old male arrived at Dr. Soetomo Hospital (SH), Surabaya, Indonesia with a chief complaint recurrent general weakness due to anemia. This problem was solved temporarily by repeated hospitalization within the last 1 year for recurrent transfusion. The patient’s appetite and sleeping quality was good, his daily activities were within normal limits. Our patient had no motor or sensory complaints. Every time he felt weak, his hands and face turned pale and then he was admitted to the peripheral hospital. The patient denied other complaints such as headache, fever, bloody stool, blood in urine, history of trauma, or spontaneous bleeding from other places whenever he felt weak. The patient didn’t have medical record about the laboratory value from peripheral hospital. When his anemia had been resolved, he felt fit and was discharged from the hospital. His last transfusion was 2 months before this admission. When arrive in SH, the patient was found to be anemic, which required transfusion until his condition improved and acceptable for operation of his lump. He had a painless lump in his lower left abdomen which was recognized by his mother since he was a 3-days-old neonate and increased in size as the patient grew older. The patient reported no other lumps grew elsewhere on his body. The patient had a good appetite, never complained of abdominal distension, no blood in his feces, had normal bowel habits, and never had other digestive problems. His urine was clear and yellow, and no complaints regarding his urination were made. The patient’s weight was stable in the last 1 year, and he had no history of other diseases or high blood pressure. No peripheral blood smear examination nor fecal occult blood test (FOBT) was previously performed.

The patient had no family history of recurrent anemia, tumor, cancer, or similar complaints. The patient’s mother was 24 years old when the patient was conceived. Routine checks by the midwife and an ultrasound examination of the womb by an obstetrician revealed that the fetus was normal. On physical examination, the patient’s weight was 54 kg, and his vital signs, heart, and lungs were normal. His conjunctiva was anemic. In abdominal examination, we obtained the impression of a mass lump in the left lower quadrant with the skin surface was normal as the surrounding mass, normal bowel sounds, tympanic percussion, palpation of a single solid mass, flat surface, with firm impression boundaries, fixed at the base, painless, mass size 11 × 8 × 6 cm, does not cross the midline. No palpable enlarged lymph nodes were found in the head, neck, axilla, or inguinal regions. Liver and spleen impressions were within normal limits. Both testes were palpable within normal limits. The rectal digital examination, we found that the ampulla recti did not collapse, and no palpable impression of an intraluminal or extraluminal mass was noted, hand gloves was visible feces without blood. Motor and sensory functions were within normal limits. Laboratory testing showed normal tumor markers of αFP < 1.3 and βhCG < 2.0, blood count show Hb = 8.0 g/dL. Other laboratory values were within the normal range.

The results of physical examination revealed an intrabdominal mass with anemia; thus, further radiological examination was recommended. Abdominal ultrasound on 1 month before operation revealed a donut-shaped intraluminal mass in the left lower quadrant of the abdomen; this mass appeared to lead to intussusception, but no symptoms of intussusception that matched the patient’s clinical condition. A Computed Tomography (CT) Scan with contrast of the abdomen was then performed for further investigation.

Corresponding Author: N Wisnu Sutarja
Email: wisnufcyrick@gmail.com
CT scan with contrast of the abdomen on 1 week after ultrasonography showed a lesion with solid components, fat, and calcification. The lesion measured 10.7 × 7.72 × 4.71 cm and was located in the left parailiac region. Contrast administration showed enhancement of the edges, septa, and solid parts of the lesion. Figure (1A) shows the lesion in the lower left quadrant of the patient’s abdomen.

From the laparotomy, we found clear peritoneal fluid. The tumor was located in the intraluminal jejunum and this jejunum attached to the left white line, sigmoid, and terminal ileum, which was pulled to the left. Release of intestinal adhesion followed by tumor evaluation was then performed (Fig 1B). The intraluminal tumor in the jejunum was observed approximately 40 – 52 cm (about 12 cm long) distal to the ligament of Treitz. The tumor was freed from the surrounding tissue and then total tumor was resected along with the surrounding jejunum for about 20 cm (Fig 1C, 1D). After opening the resected jejunum, there was single heterogeneous (solid and cystic) oval mass tightly attached with mesenteries side of jejunum, with size 11 cm × 10 cm × 5 cm, no ulceration, no hemorrhage as shown in Figure (1D). On further exploration, we obtained liver had sharp edges, a flat surface, and a normal red color. No mesenteric lymph node enlargement was noted. After the intact resection of the jejunum with tumor, end-to-end jejunum anastomosis were performed.

Macroscopic examination of the anatomical pathology of the tumor revealed that the preparation contained portions of jejunum tissue weighing 275 g, 3.5 cm in proximal jejunum diameter, and 3 cm in distal jejunum diameter. The outer surface was partly smooth and partly covered with fat. On the slices, the mass was observed as sebaceous tissue, bone, teeth, and hair, measuring 10 cm × 9.5 cm × 4.5 cm. Some cysts measuring 1.2 cm in diameter with a yellowish-gray color and dense, chewy consistency were noted.

Microscopic findings showed sections of intestinal tissue with tumor growth consisting of skin epidermis, sebaceous glands, hair follicles, skin adnexa, glandular epithelium, hard bone tissue, fatty tissue, squamae, and calcifications, as shown in...
This disease is usually diagnosed based on the patient's history, physical examination of the intra-abdominal mass, laboratory results revealed normal AFP and β-hCG values, and abdominal contrast CT scan. In our study, the results of the CT scan showed a lesion with solid components, fat, and calcifications. The lesion was a little bit bigger in width by operation 1 month after the CT scan was taken.

Teratoma is a common form of germ cell tumor (GCT). This tumor can develop congenitally or during childhood. Because the tumor in our case was observed as early as when the patient was 3 days old, it may have developed congenitally. Mature teratomas show insignificant tumor growth. Our patient showed no clinical complaints or signs of distant spread, which often appears in immature or malignant tumors. Surgical removal of the tumor was performed only after the patient's repeated complaints of anemia as a teenager. His family was also afraid of operating option explained why he had just operated the lump when he was 15 years old. The patient's repeated anemia may be due to microscopic bloody stool, unfortunately we didn’t perform FOBT to confirm this supposition. The type of anemia could not be identified because peripheral blood smear test was not conducted. While this type of tumor is not likely to metastasize to the bone marrow, this belief could not be confirmed because no peripheral blood smear test was performed. Surgery revealed a tumor located approximately 40 cm distal to the ligament of Treitz, which is still part of the jejunum. The jejunal with intraluminal tumor attach to the surrounding tissue confirmed that the tumor had been growing over a long period, but no signs of mesenteric or locoregional spread were noted, as supported by the patient's good liver and good mesenteric conditions. Thus, the tumor could be removed completely.

Macroscopic and microscopic pathological examination of the tumor showed sebaceous tissue, bone, teeth, hair, fatty tissue, squamous, and skin. These findings explained that tumor contains parts of endoderm, ectoderm, and mesoderm where each part can differentiate into many different tissues. Different types of tissue from these three germ layers lead to a teratoma. From the end of the tumor resection, histopathological examination revealed no glial cells or neuroepithelial components. This finding indicates the absence of malignancy (i.e., a mature teratoma).

Chemotherapy is recommended for patients with grades 2 and 3 congenital immature teratomas after surgical resection. Our type of JT was mature, no additional chemotherapy or radiotherapy was required after complete tumor excision. The variation of serum AFP level could be an indicator of tumor recurrence and of the need for further chemotherapy for patient with teratoma, especially in immature teratoma. In our case, three months follow up after operation of this patients show normal AFP and β-hCG values, and 1.5 years after operation also no sign recurrent general weakness, no sign of recurrent abdominal mass.