

**RETROPERITONEAL LIPOMA IN PEDIATRIC PATIENT-A CASE REPORT AND  
DISCUSSION OF GROWTH AND DEVELOPMENT****Thant Htet Htet Zaw, \*Wen Zhang, Heyun Gao, Geng Li, Shanzhen Yu, Yunkai Guo, Hu Tao, Guowei Du and  
Yifan Liu**

Department of Pediatric Surgery, Zhongnan Hospital of Wuhan University, Wuhan 430071, China.

**\*Corresponding Author: Wen Zhang**

Department of Pediatric Surgery, Zhongnan Hospital of Wuhan University, Wuhan 430071, China.

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**ABSTRACT**

Lipomas are rare in the abdomen of pediatric patients and the treatment approach depends on several factors, including the size and location of the tumor, the patient's age and health, and any symptoms.<sup>[1,2]</sup> We present a case report of a 8-year-old female with an asymptomatic abdominal pain and retroperitoneal mass found 3 days ago. She was smaller for her age and looked malnourished. After the physical examination and required radio imaging technique examinations (Ultrasound, CT etc.), the huge mass in right peritoneum was found and considered to be lipogenic tumor or lipoblastoma but liposarcoma can not be excluded as well. Hence, surgical removal was deemed necessary. The patient underwent a successful surgical excision under general anesthesia, and histopathology confirmed the diagnosis of a benign lipoma. The patient experienced mild pain at the incision site but was able to return to normal activities within a week of surgery. Surgical removal of abdominal lipomas in pediatric patients is a safe and effective treatment option, with a low risk of complications. Close follow-up and monitoring are necessary to ensure complete resolution and prevent recurrence.

**KEYWORD:** Retroperitoneal; Pediatric; Lipoma; Tumor; Growth.**INTRODUCTION**

A lipoma is a benign tumor composed of fat cells. While lipomas can occur anywhere in the body, they are relatively rare in the abdomen, especially in pediatric patients. If a lipoma is discovered in the abdomen of a pediatric patient, the treatment approach will depend on several factors, including the size and location of the mass, the patient's age and health, and any symptoms the patient may be experiencing. In most cases, a lipoma in the abdomen of a pediatric patient can be safely observed and monitored over time, especially if the patient is asymptomatic. If the lipoma is large or causing symptoms such as pain or discomfort, surgical removal may be necessary. In general, surgical removal of a lipoma is a relatively straightforward procedure with a low risk of complications.

**MATERIAL AND METHOD****CASE REPORT**

An 8 year old girl complained about abdominal pain 3 days ago, mainly around the umbilicus, without diarrhea, fever or other discomfort. The general condition was good looked pale and malnourished, and no special treatment was given. Her height was 125cm, her weight was 22.5Kg, which is below average for an 8 year old. On physical examination, the right abdomen was slightly distended. The whole abdominal is soft, no obvious tenderness and rebound tenderness, a slight object was

palpated on the right abdomen, and an obvious mass could be reached, the boundaries were still clear. Her grandmother said when the patient was 3 years old she noticed her abdomen seemed slightly elevated on the right side when she was giving her a bath. But since there was no other symptoms or discomfort, they didn't bring her to see the doctor.

Ultrasound indicated heterogeneous soft-tissue mass measuring 16.8×12.0×9.4cm. It was seen in the right abdomen. (Fig-2,a) It was close to the middle and lower pole of the right kidney. The right kidney is compressed and shifted backward and the front portion of blood vessel at renal hilus is close to the mass. The upper border of the mass is close to the liver and gallbladder. Lower border reaches the level of the anterior superior iliac spine. The rear is close to the inferior vena cava and right iliac vessel, inferior vena cava was compressed. The front border is close to the abdominal wall. No obvious relationship with celiac trunk and pancreas. Thin strips of color blood flow signals can be seen, and the spectrum of arteries and veins can be detected, branches from the abdominal aorta and inferior vena cava seemed to enter the mass. (Fig-2,b). It was considered to be lipogenic tumor or lipoblastoma but liposarcoma can not be excluded as well.

Computed tomography(CT) scan demonstrated a large fat density mass within 128x70x175mm in the retroperitoneum in right liver-kidney space, no obvious blood vessel is seen inside the mass. The mass has a clear margin. No enlarged lymph nodes were seen in the retroperitoneum. The whole abdominal angiography shows no obvious abnormalities. (Fig-3)

After the mass was removed, the biopsy was done and it's considered to be a lipoma, adipose tissue was tumor-like hyperplasia.

## METHODOLOGY

### Operative Procedure

The operative procedure for a lipoma in pediatric patients is generally similar to that in adult patients. The procedure involves making an incision in the skin overlying the mass and carefully dissecting the fatty tumor from the surrounding tissues.

Retroperitoneal lesion resection (right side) and perirenal adhesinosis was performed under general anesthesia. A transverse surgical incision was made in the right abdomen over the location of the mass. A well encapsulated huge mass was loosely attached to the right retroperitoneum, and the right intestine was pushed to the left by mass.

The extent of the tumor extends from the sub diaphragm down to the iliac fossa, and the left border crosses the abdominal midline. The mass was separated gently and bluntly along the tumor capsule, was easily dissected free from the retroperitoneal space without injury to adjacent structures such as inferior vena cava, right kidney and blood vessels around the hilus of the kidney. The incision was closed with sutures, and the patient was monitored for a short time in the recovery room before being discharged. Grossly, the tumor measured 22 x14x6 cm and weighted 825g and has a complete membrane seen like adipose tissue, and is soft. (Fig-1) The specimen had a grayish-yellow nodular mass with a complete surface capsule. After surgery, the patient experienced some pain or discomfort at the incision site, but this was managed with over-the-counter pain relievers. The patient needs to avoid certain activities or behaviors for a period of time to allow the incision to heal properly. In most cases, the patient can return to their normal activities within a few days to a week after surgery.

### Post-operative

After surgical removal of a lipoma in the abdomen of a pediatric patient, postoperative care is crucial to ensure proper healing and a successful recovery.

The goal of postoperative care after surgery to remove a lipoma in the abdomen of a pediatric patient is to promote healing, manage pain, prevent infection, monitor for complications and growth rate.<sup>[3]</sup> By following the surgeon's instructions and attending

follow-up appointments, the patient can have a successful recovery and return to normal activities as soon as possible.

## DISCUSSION

As we mentioned earlier, lipomas in the retroperitoneum of pediatric patients are relatively rare with only 5 % of cases.<sup>[4]</sup> The majority of lipoma have been found on extremities or the trunk. While lipomas can occur in both boys and girls, they are more common in women and tend to occur more frequently in adults than in children.<sup>[5]</sup> The main challenge of tumor is determining when surgical removal is necessary.

In general, surgical removal of a lipoma is recommended if the tumor is causing symptoms such as pain, discomfort, or interference with normal bodily functions. However, in the case of a pediatric patient, there may be additional considerations. For example, a large lipoma in the abdomen could interfere with the development of other organs or structures, which could have long-term implications for the patient's health and growth.<sup>[2]</sup>

The differential diagnosis includes retroperitoneal liposarcoma, ovarian cysts, renal cysts, retroperitoneal fibrosis, adrenal tumors, and gastrointestinal tumors. Diagnostic imaging techniques such as computed tomography (CT) and ultrasound are ordered for pre-operative investigation.<sup>[3]</sup> Resection and pathologic examination of the specimen are needed for definitive diagnosis.

The most common signs and symptoms are palpable mass or abdominal distention abdominal pain. The tumors size can range from 8cm-25cm and weight from 310g-1900g. The retroperitoneal lipomas are always the largest.<sup>[1,2,6]</sup>

Another challenge with lipomas in the abdomen is determining the optimal surgical approach. The surgeon must carefully consider the location and size of the lipoma to determine the best way to access and remove the tumor. Depending on the location of the lipoma, invasive techniques such as open surgery or laparoscopy may be the options.<sup>[7]</sup> However, in some cases, open surgery may be necessary to ensure complete removal of the tumor. Overall, the decision to surgically remove a lipoma in the abdomen of a pediatric patient should be made on a case-by-case basis, taking into consideration the patient's age, overall health, the size and location of the tumor, and the potential risks and benefits of surgical intervention.<sup>[8]</sup> With careful planning and appropriate surgical technique, however, surgical removal of a lipoma in a pediatric patient can be a safe and effective treatment option.<sup>[9]</sup>

It is also important to consider the potential risks and complications of surgery in a pediatric patient. While surgical removal of a lipoma is generally considered safe, there is always a risk of bleeding, infection, and

other complications. Additionally, pediatric patients may require specialized care and monitoring after surgery to ensure a safe and smooth recovery.

For this patient, her height was 125cm, her weight was 22.5Kg, which is below average for an 8 year old, during the follow up appointment 3months after surgery she has gained 2kg of weight and 1cm of height(24.5kg, 126cm). It is safe to say that the lipoma can affect the growth and development in pediatric patient. Especially when it's occurred in retroperitoneal area, it interrupts the digestive system which leads to the malnutrition of the patient. If the child is under the average range of weight and high for a long period of time without any underlying causes, lipoma should be taken under consideration as one of the reasons.

However, the prognosis for a lipoma is excellent and the recurrence rate is generally considered to be very low.<sup>[10]</sup> It is important to have regular follow-up appointments with your healthcare provider to monitor for any signs of recurrence or other complications.

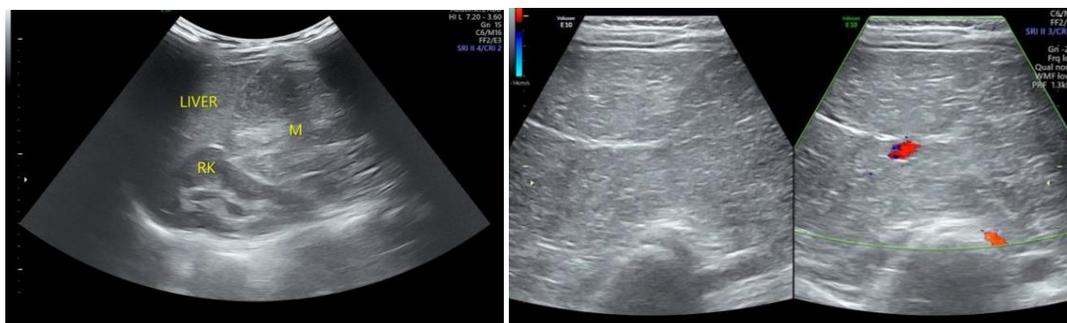
### CONCLUSION

In conclusion, a lipoma in the abdomen of a pediatric patient is a rare occurrence. Treatment options will depend on the size, location, and symptoms of the lipoma, as well as the patient's age and overall health. In most cases, observation and monitoring are sufficient, but surgical removal may be necessary if the lipoma is large or causing discomfort. The surgical procedure is

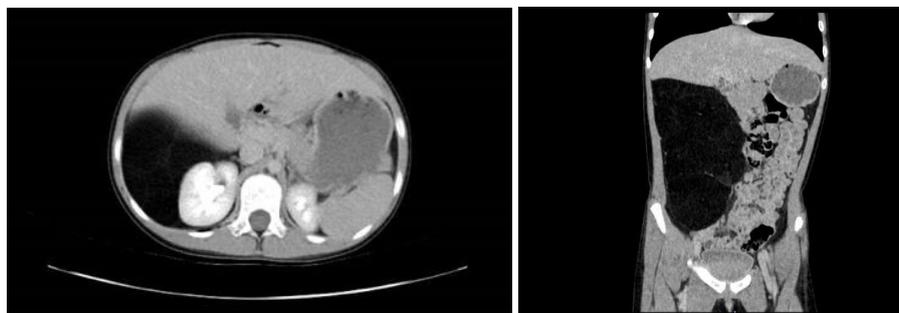
generally safe and straightforward, and the patient can usually return to normal activities within a few days to a week after surgery. Close follow-up and monitoring may be necessary in some cases to ensure the lipoma does not reoccur. Overall, the prognosis for a lipoma in the abdomen of a pediatric patient is excellent, and most patients can expect a full recovery with appropriate treatment.



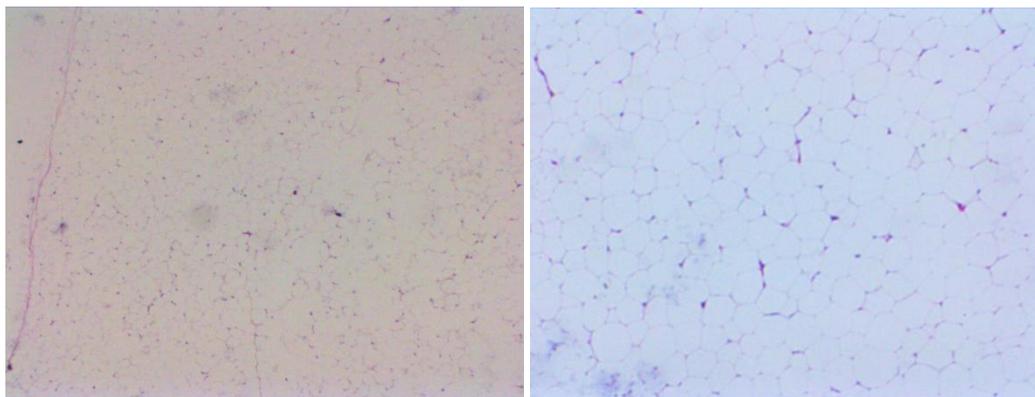
**Fig. 1: Gross appearance of the resected retroperitoneal lipoma: has a complete membrane seen like adipose tissue, and is soft.**



**Fig. 2: Abdominal ultrasound ;(a)the scan shows that the mass was close to the middle and lower pole of the right kidney, the upper border of the mass is close to the liver and gallbladder (b) The scan reveals thin strips of color blood flow signals, the spectrum of arteries and veins can be detected.**



**Fig. 3: Computed Tomography(CT);The scan shows that the mass has the clear margin and no enlarged lymph nodes were seen.**



**Fig. 4: Biopsy result; (a) A Right retroperitoneal mass: a 20\*14\*6cm grayish-yellow nodular mass with a complete surface capsule.(b) Peritumoral adipose tissue: a pile of 7\*4\*1cm grayish-yellow fat-like tissue.**

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