

*Case Report*

**Giant Post-traumatic Splenic Cysts: A Case Report**

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**Abstract:**

Splenic cysts are highly infrequent, about 0.07 percent. A post-traumatic splenic cyst is a rare complication that should be noticed if a lump in the left upper abdomen swells after abdominal trauma. This publication reported a case of a 23-year-old male student with a lump in the upper left abdomen. This study aims to describe the patient's disease with the background of the case above. The author, in this case, uses the case report research method. Case reports are detailed descriptions of rare diseases, recent occurrences, unusual indications or symptoms of disease, unreported studies, or unexpected events observed in a patient during treatment. As a result of the abdominal examination, a smooth mass was palpable on the abdomen, located in the left hypochondrium and epigastric region. This mass is stable, with a diameter of 25 cm. Computed tomography (CT) of the abdomen found hypodense lesions, round, firm, and regular in the spleen, with intralesional pneumatization and air-fluid. A median laparotomy found a giant splenic cyst. A total splenectomy was performed. Found splenic hemorrhagic cysts without signs of malignancy. An unusual occurrence of a post-traumatic giant splenic cyst. A post-traumatic splenic cyst should be considered if one has a mass in the left upper abdomen after experiencing abdominal trauma. Total splenectomy, either open or laparoscopic, is the preferred treatment, especially if the cyst is large. This study is an original study by the author and is data taken directly from patients.

**Keywords:** Abdominal trauma; Post-traumatic splenic cyst; Splenic cyst.

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**Introduction**

There were 800 cases reported of splenic cysts, categorized as infrequent lesions, worldwide. Still, splenic cysts correlated with hypersplenism are exceedingly rare since only a few cases are documented globally, and also, in clinical terms, they can be either asymptomatic or symptomatic. In rare cases, patients who have been symptomatic

generally experience stomach pain or an abdominal lump.<sup>1</sup> Patients with splenic cysts may suffer left-sided abdomen and shoulder pain, as well as postoperative heaviness, and it has higher chances of infection and rupture if the splenic cysts' diameter is more than five cm.<sup>2</sup>

Primary cysts (including neoplastic and congenital) and secondary cysts are splenic cysts

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(including traumatic cysts and necrotic cysts).<sup>3</sup> Cysts wider than 4 inches in diameter should indeed be surgically resected.<sup>4</sup> We present a rare case of a giant post-traumatic splenic cyst that was operated on by median laparotomy and total splenectomy.

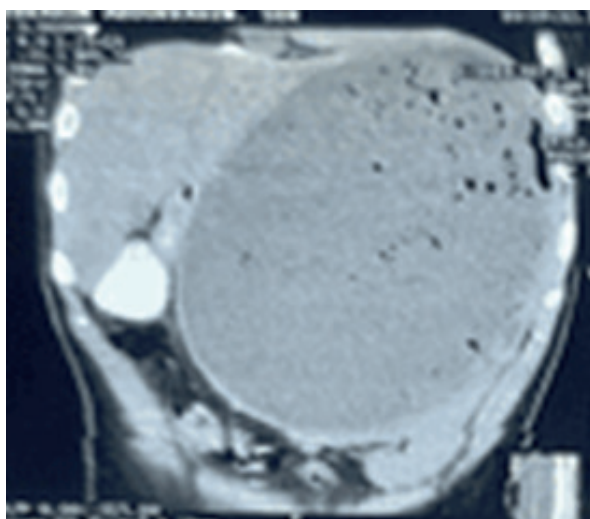
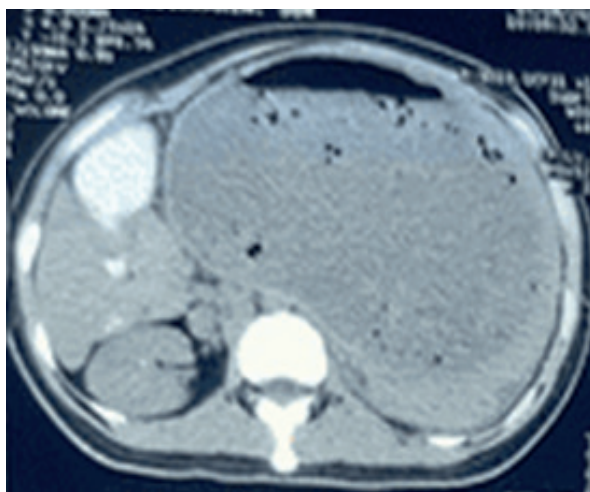
### Case report

A 23-year-old male, a student, came to the general surgery clinic with a lump in the upper left abdomen. Complaints arose after the patient experienced blunt trauma to the stomach when the patient played basketball six months ago. The patient had difficulty breathing and abdominal pain in the upper left abdomen. A history of pain increases after eating and does not decrease even with antacids or pain relievers.

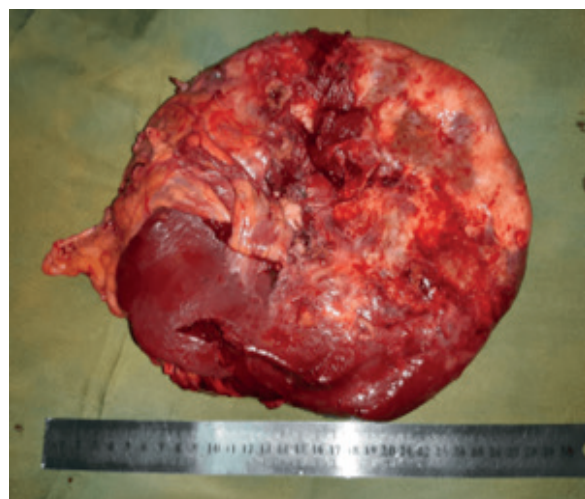
No diarrhea, constipation, or fever was reported. On physical examination, vital signs were within

normal limits. The patient got the complete blood count test, and the result showed that the patient's white blood cell was 11.3/mm<sup>3</sup>, 4.23 mill/ul of red blood cell, 10.2 g/% of hemoglobin, and 31.0 vol% of hematocrit. Additionally, the mean corpuscular volume result was 73.3 fl, 24.1 fl of mean corpuscular hemoglobin, 32.9 pg of mean corpuscular hemoglobin concentration, 442 cell/mm<sup>3</sup> of platelet, 13.8% of lymphocyte, 12.5% of mixed cell percentage, and 73.7% of neutrophil.

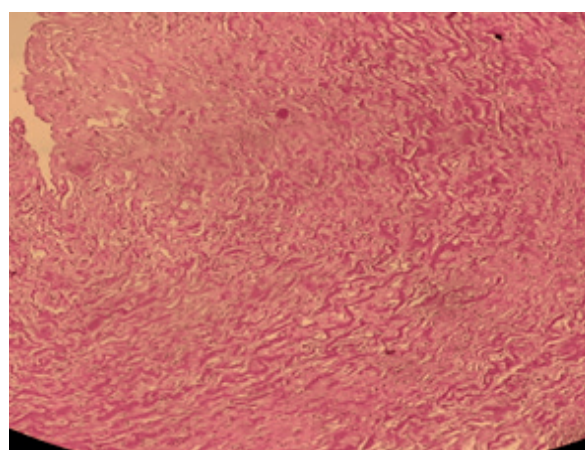
Furthermore, during an abdominal investigation, a smooth abdominal mass was palpable in the left hypochondrium and epigastric region. This mass is stable, with a diameter of 25 cm. The abdomen's computed tomography (CT) found a hypodense lesion in the round, firm, and normal spleen, with intralesional pneumatization and air-fluid level (Fig. 1).



**Figure 1.** The abdomen CT scan indicates a hypodense lesion in the splenic area, a rounded shape, well-defined, regular edges, and an intralesional pneumatization and air-fluid level.

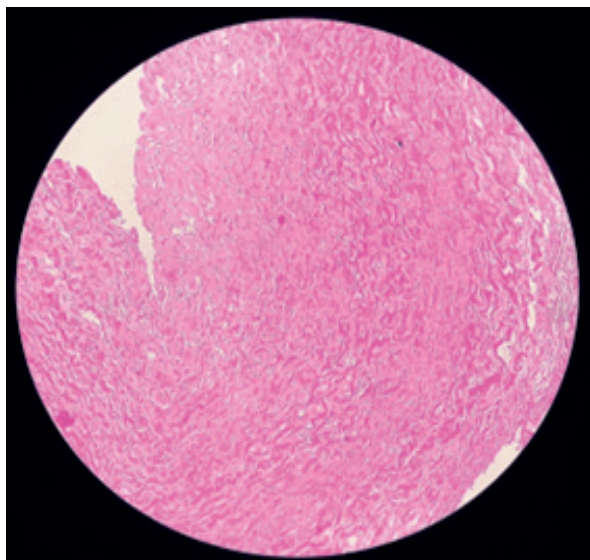


**Figure 2.** Surgical sample after content drainage.



**Figure 3.** Pathological examination revealed a splenic hemorrhage cyst. The wall tissue of a room in the form of connective tissue was found to have bleeding and hemosiderophages, and there were no signs of malignancy.

Median laparotomy revealed a giant splenic cyst (Fig 2). A total splenectomy was performed. After total splenectomy, approximately 1200 ml of straw-colored cystic fluid was carefully aspirated to avoid rupturing into the operating plane. Near the splenectomy site, a drain is left behind. The progress is entirely satisfactory. A pathological examination of the surgical specimen revealed a splenic hemorrhage cyst without signs of malignancy (Fig. 3).



**Figure 4.** Another pathological examination revealed a splenic hemorrhage cyst. The wall tissue of a room in the form of connective tissue was found to have bleeding and hemosiderophages, and there were no signs of malignancy.

The procedure went smoothly, and on the fifth postoperative day, the patient was discharged and regularly visited the outpatient department on a regular schedule.

### Discussion

In a basic form, nonparasitic cysts are infrequent. In general, nonparasitic splenic cysts are usually benign, and non-traumatic bleeding into these cysts does not even occur if they are small.<sup>5</sup> Because both signs and symptoms are nonspecific, it is frequently misdiagnosed.<sup>6</sup> Furthermore, nonparasitic cysts are divided into two types: primary (true, epithelial), which are connected by the covering of epithelial (dermoid, mesothelial, and epidermoid) or the covering of endothelial (lymphangioma and hemangioma), and secondary (non-epithelial and pseudocyst), it is typically the result of post-traumatic origin.<sup>7</sup> If the cyst is massive and nearly entirely covered by splenic

parenchyma, or if it is positioned in the splenic parenchyma, a total splenectomy is advised because it can decrease the rate of bleeding in the spleen area.<sup>7</sup>

The majority of splenic lesions are discovered incidentally. Splenic cysts are usually asymptomatic until discovered. However, they can cause stomach upset, especially at a young age,<sup>8,9</sup> and people between the ages of 20 and 40 are more likely to develop a splenic cyst.<sup>10</sup> Secondary splenic cysts, which comprise 75% of all nonparasitic cysts, are usually caused by trauma. It represents the resolution of a subcapsular or intraparenchymal hematoma.<sup>11</sup>

In addition, the spleen and the liver are the vital organs most frequently injured by blunt abdominal trauma, and spleen rupture is an uncommon side effect of blunt abdominal trauma.<sup>12</sup> After abdominal trauma is blunting, another area with a higher risk of getting injured is the spleen area in the body. Patients with splenic trauma may be medically essential to maintain splenic tissue in the event of splenectomy and the case of hypersplenism. All procedures described are to avoid recurrent disease.<sup>13</sup>

Another issue that must be concluded is how to diagnose a splenic cyst. A splenic cyst is a rare disorder discovered by coincidence during imaging examinations or routine surgical practices. This would be attributable to the fact that they are typically asymptomatic and lack traditional clinical characteristics.<sup>14</sup> Furthermore, if the splenic cysts are found and have a large diameter, the safest procedure is splenectomy because it can prevent many risks, such as infection and bleeding.<sup>14</sup>

Spleen cysts are difficult to diagnose because it is difficult to distinguish. Certain variables, such as cystic mass, must be presented. Evaluating it as part of the splenic cyst differential diagnosis is critical.<sup>15</sup> In one case, a huge splenic cyst was found, and doctors decided to perform a splenectomy due to the size of the cyst and the symptoms that showed splenectomy was the best option to avoid many risks, such as bleeding and recurrence.<sup>15</sup>

Splenic cysts will be discovered during a screening CT scan of the abdomen. One of the treatments for splenic cysts is splenectomy. This procedure brings the benefit of a definitive histological diagnosis because it can eliminate the risk of recurrent bleeding and has significantly lowered morbidity

compared to open surgery.<sup>16</sup> The essential point is diagnosing this illness in the left upper quadrant discomfort setting, even in grownups, because any delayed diagnosis or mistreatment might result in life-threatening consequences.<sup>17</sup>

Splenic cysts are usually treated surgically, with total or partial splenectomy based on the various circumstances associated with the case.<sup>18</sup> Small, asymptomatic splenic cysts smaller than 5 centimeters in diameter can be saved. Moreover, if the cysts are more extensive than 5 cm should be treated, and one of the treatments is splenectomy, a treatment that can control the malignant process and avoid recurrences. Sometimes, a patient treated with splenectomy only faces normal postoperative pain, gets discharged early, and shows no signs of recurrence.<sup>19</sup> In some splenectomy cases, two patients were treated with splenectomy and faced no complications after the surgery.<sup>20</sup> Spleen cysts should be treated by splenectomy, which can be done openly, or laparoscopy. A conservative approach should be avoided as splenectomy is the best option, particularly if the cyst is massive.<sup>21</sup> Despite many positive effects of splenectomy,

this treatment can also lead to the most common postoperative syndrome called overwhelming post-splenectomy infection (OPSI), which can lead to a fatal condition such as thromboembolism and infection. However, this condition can be prevented by giving patients antibiotic prophylaxis, educating patients, and vaccinating patients.<sup>21</sup>

### **Conclusion**

A giant post-traumatic splenic cyst was reported in this publication. If you have a lump in the left upper abdomen following abdominal trauma, you may have a post-traumatic splenic cyst. Computed tomography examinations can benefit patients with splenic cysts with preoperative diagnosis and surgical preparation and planning. The preferred treatment is total splenectomy, either open or laparoscopic, especially if the cyst is large.

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