Splenic Arteriovenous Fistula with Non-Cirrhotic Portal Hypertension : a Case Report

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Abstract
Background:*As an uncommon cause of portal hypertension, splenic arteriovenous fistula (SAVF) may show as stomach discomfort, diarrhea, ascites, and/or hematemesis. Formation of a fistula may be traumatic or spontaneous..[1,2]*
Case Presentation : *A 7 years old Female with history of recurrent episodes of hematemesis, endoscopy in 2021 showed tortous esophageal varices with multiple site of bleeding, Thoraco-abdominal CTA in 2021 showed thrombus in portal vein and Splenomegaly. During operation there was incidental finding of SAVF, the fistula then ligated and followed by retrograde thrombectomy portal vein and distal splenorenal shunt. Post operative abdominal ultrasound showed portal vein diameter 6mm with velocity 15.7cm/s, there was no recurrent hematemesis and patient was discharge on 7th day post operation.*
Disscussion *: Several misunderstandings regarding shunt surgery in the pediatric age range, such as increased failure rates in children less than 10 years, especially those with veins smaller than 10 mm in diameter. No long-term evidence exist to support these assumptions. Moreover, shunts are cost-effective, less distressing psychologically than recurrent endoscopic operations, and promote normal physical growth in youngsters. [4,5] Distal splenorenal shunt surgery provides a safe and reliable alternative to recurrent endoscopic operations for the avoidance of bleeding and improvement of hypersplenism in children with portal hypertension, according to a study published in the journal Pediatric Surgery.*

Keywords :*Splenic arteriovenous fistula, portal hypertension, distal splenorenal shunt, Case Report*

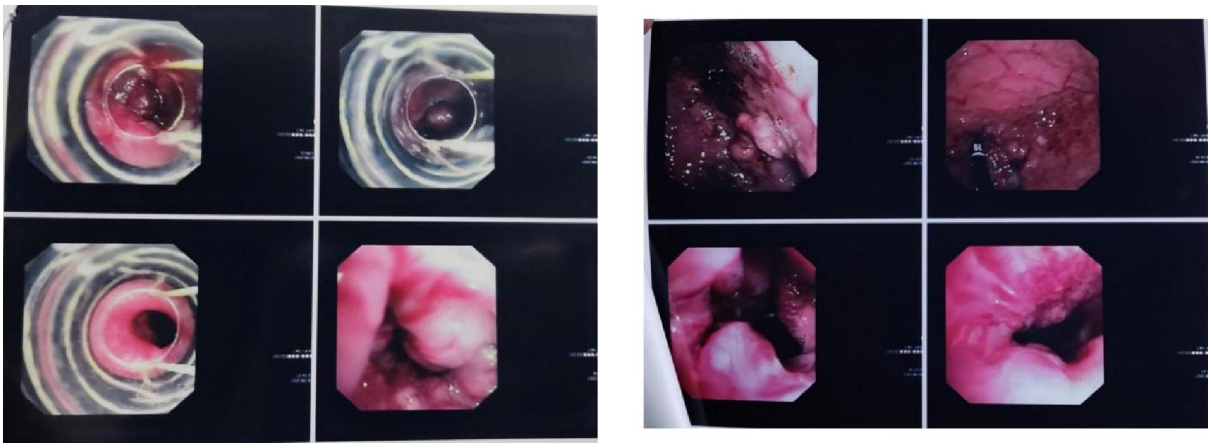
INTRODUCTION

As an uncommon cause of portal hypertension, splenic arteriovenous fistula (SAVF) may show as stomach discomfort, diarrhea, ascites, and/or hematemesis. The creation of a fistula may be traumatic or spontaneous. 86% of spontaneous SAVFs occur in females, and 55% are connected with a pre-existing splenic artery aneurysm. In the past, surgery was the sole

therapy for portal hypertension, and fatality rates were quite high. Currently, around 10 to 15 percent of patients require surgery..[1,2,3]

CASE PRESENTATION

A 7 years old Female with history of recurrent episodes of hematemesis in the past 3 years, abdominal ultrasound in 2019 found hepatomegaly and splenomegaly, endoscopy in 2021 showed tortous esophageal varices with erosion and multiple site of bleeding (Picture 1), Thoraco-abdominal computed tomography angiography (CTA) in 2021 showed thrombus in portal vein and splenomegaly (Picture 2).



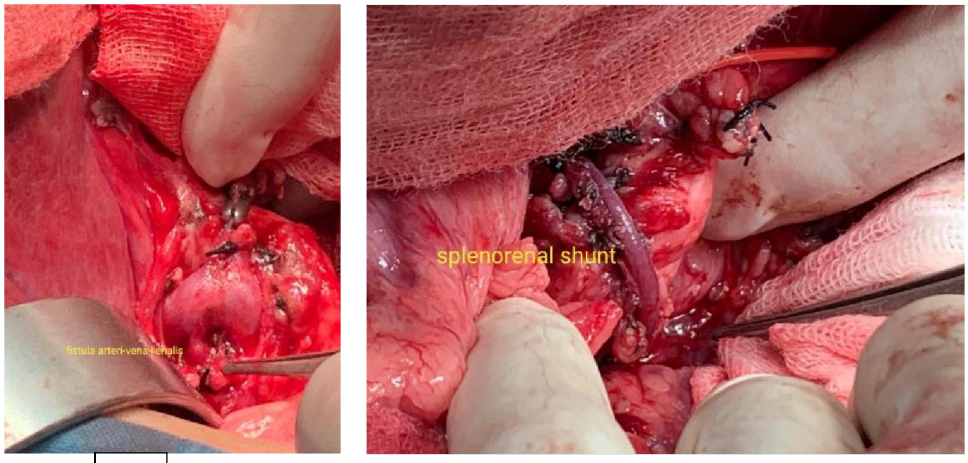
Picture. 1. Abdominal Ultrasound findings : tortous esophageal varices with erosion and multiple site of bleeding

Picture. 2. Thoraco-abdominal CTA findings : thrombus in portal vein and splenomegaly

Operation Technique

From the xiphoideus process down to the umbilicus, an incision was made in the midline of the abdomen. To gain access to the internal organs, the peritoneal cavity had to be cut open. As the transverse colon rose, it separated the small bowel from the abdominal cavity. Splenic vein, which sits lodged in the pancreas' inferior border, has been discovered.The left gastric vein was ligated, and there was incidental finding of SAVF (Picture 3A) , the fistula then ligated and followed by retrograde thrombectomy portal vein through superior mesenteric vein using 3 french Fogarty catheter. Left renal vein was exposed. A venovenous anastomosis

was formed between the left renal and splenic veins using a saphenous vein graft, and the graft was found to be patent with no bleeding at the anastomosis site. (Picture 3B).



Picture. 3. A. SAVF ; B. Venovenous anastomosis was created between left renal and splenic vein wih saphenous vein graft

Post operative evaluastion with abdominal ultrasound showed portal vein diameter 6mm with velocity 15.7cm/s, there was no recurrent hematemesis and patient was discharge on 7th day post operation.

DISCUSSION

SAVF is scarce, with just 16% of patients presenting without indications of portal hypertension. When a patient exhibits symptoms of acute portal hypertension that are not linked with a chronic liver condition, SAVF should be explored.Untreated SAVF leads to portal hypertension and variceal hemorrhage, as well as intra-hepatic sclerosis, which produces persistent portal hypertension that continues after therapy.Several misunderstandings regarding shunt surgery in the pediatric age range, such as increased failure rates in children less than 10 years, especially those with veins smaller than 10 mm in diameter. No long-term evidence exist to support these assumptions. Moreover, shunts are economical, psychologically less stressful than repeated endoscopic operations, and promote children's normal physical growth..[4,5]

CONCLUSIONS

Patients exhibiting symptoms of acute portal hypertension that are not accompanied with a chronic liver condition may be considered for SAVF treatment. Portal hypertension can be caused by this pathology, and doctors should be aware of it. In children with portal hypertension, a safe and effective alternative to recurrent endoscopic procedures is distal splenorenal shunt surgery.

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Informed Consent Statement

Not applicable

Ethical Approval
Not applicable

Conflict of Interest
The authors declared no conflict if interest.

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