A splenic artery aneurysm is the most frequently observed visceral artery aneurysm, with an incidence of 40%–60% of all visceral aneurysms. The most common treatment is surgical resection with or without splenic artery reconstruction, or exclusion with catheter intervention, which may reduce postoperative complications, such as pancreas injury. However, when the aneurysm is associated with an arterial anomaly, the treatment becomes complicated, especially if it is presented during pregnancy. We herein report the case of a patient with a splenic artery aneurysm of the hepatosplenomesenteric trunk that presented during pregnancy.

We herein report the case of a splenic artery aneurysm with a hepatosplenomesenteric trunk that presented in a pregnant woman. Catheter embolization was not performed due to the wide neck of the aneurysm and its close location to the trunk indicates a high risk of mesenteric trunk thrombosis. We instead performed surgical resection of the aneurysm after successful delivery of the infant by Caesarian section. The splenic artery was reconstructed by side-to-end anastomosis with the common hepatic artery.

Keywords: splenic artery aneurysm, hepatosplenomesenteric trunk, visceral artery aneurysm
Thus, segmental arterial mediolysis (SAM) was considered to be the etiology of the aneurysm. The postoperative course was uneventful, and the patient has remained healthy during the four years since the surgery.

Discussion

Splenic artery aneurysms are the most common type of visceral artery aneurysm.1-3) The goal of treatment of these aneurysms is to prevent rupture, while maintaining the blood flow. Therefore, the resection of the aneurysm and the reconstruction of the splenic artery by surgery remain the gold standard for fulfilling these goals.4)

Recently, the exclusion of the aneurysm with thrombotic agents, such as thrombin or a coil delivered through a catheter has been presented as a useful and safe alternative, as performing an operation around the pancreas is associated with a risk of pancreatic injury, and thus, catheter intervention has become a favorable alternative to surgery.5) Along this line, the present patient was initially referred to a radiologist for catheter intervention, but the anomaly of the visceral artery and configuration was performed without event. The patient finally agreed to undergo surgical treatment after delivery.

At laparotomy, the pancreas head was isolated carefully from the retroperitoneum using Kocher’s maneuver. The aneurysm was observed just behind the pancreas head. The isolation of the aneurysm revealed the proximal side of the hepatosplenic trunk, common hepatic and the superior mesenteric artery, each of which was controlled with a tape. The cephalic margin of the pancreas was isolated subsequently, and the distal common hepatic and splenic arteries were isolated. After heparin administration, each artery was clamped, and the aneurysm was opened. The orifice of the splenic artery, which was the inflow of the aneurysm, and the distal splenic artery, which was outflow of the aneurysm, were suture closed, taking care not to induce stenosis of the SMA. The common hepatic artery was left intact. Thereafter, the distal splenic artery was translocated to anastomose it to the common hepatic artery at the cephalic field of the pancreas, in order to maintain the splenic blood flow (Fig. 2A and 2B).

The pathological examination revealed scant atherosclerosis, and diffuse medial degradation of the aneurysm.
of the aneurysm were considered to be contraindications to catheter treatment. The contrast-enhanced CT scans and angiography revealed that the common hepatic, splenic and superior mesenteric artery formed a single trunk, and the left gastric artery ran independently from the aorta. This type of anomaly, named the hepatospleno-mesenteric trunk, has been reported to have an incidence of 1% in the literature. The splenic artery aneurysm was located close to the orifice of this trunk, and therefore, catheter intervention was considered to be associated with an increased risk of distal embolization, especially to the mesenteric artery. Therefore, surgical treatment was considered to be indicated, and was finally performed after the successful Caesarian delivery of the patient’s infant.

Another problem associated with the treatment of this patient was that she was pregnant when she was referred to our department for treatment. Reports about the rupture of a splenic artery aneurysm have emphasized that the risk of rupture increases during pregnancy. Moreover, the incidence of rupture is the highest in the third trimester, and the risk continues after delivery. Once an aneurysm ruptures, the risk of mortality of both the mother and child is extremely high. Therefore, surgical treatment is strongly recommended even if the aneurysm is diagnosed during pregnancy. However, the patient declined this option despite being provided full information about the risks of rupture and mortality. She agreed to undergo a Caesarian section at 36 weeks of gestation to avoid the radical change of blood pressure that occurs during delivery. Fortunately, the aneurysm did not rupture, although contrast-enhanced CT revealed enlargement of the aneurysm during pregnancy. However, we do not recommend this delayed treatment for other cases, because the risk is too high.

The operation was complicated and required careful manipulation due to the anomaly of the visceral arteries. The hepatic artery originated close to the orifice of the splenic artery. The preservation of the blood flow of the hepatic and splenic arteries after the surgical treatment was necessary, because the patient was still young and wished to have a second baby. Isolation of the aneurysm was carefully performed to avoid pancreatic injury.

![Fig. 2](image_url)
Eventually, the trunk, hepatic artery, splenic artery and superior mesenteric artery were individually controlled. The aneurysm was removed, and the blood flow to the spleen was established by the translocation of the splenic artery with anastomosis to the common hepatic artery. As the sclerotic change was trivial, and the pathological examination revealed segmental arterial mediolysis, and since the aneurysmal wall was thin and fragile, manipulation of the arteries and the aneurysm needed to be performed with extreme care. Although translocation of the splenic artery allowed for the reconstruction of the blood flow in this patient, a bypass with a vein graft had been considered as an option preoperatively. The strategy used to repair a splenic artery aneurysm with a hepatospleno-omesenteric trunk depends on the location and size of the aneurysm.

**Conclusion**

We herein reported a case of a splenic artery aneurysm in a patient with a hepatospleno-omesenteric trunk who became pregnant. Careful monitoring during pregnancy and Caesarian delivery at 36 weeks of gestation allowed the patient to have a healthy infant and to later undergo surgical repair. The translocation of the splenic artery with anastomosis to the common hepatic artery was the best way to maintain the blood flow to the spleen in this case, and the patient has been doing well for four years after the procedure.

**Disclosure Statement**

The authors have no conflicts of interest to declare.

**References**