27 YEARS OLD MALE WITH RUPTURED ANEURYSM SPLENIC ARTERY

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Abstract

Introduction: Aneurysms of the splenic artery are the third most common type of aneurysm, but their prevalence is still low. The splenic artery is the most frequent site of visceral arterial aneurysms. Usually a splenic artery aneurysm occurs as a single event; rupture is frequent, sometimes occurring as the first symptom and is sometimes fatal. The spleen has a dual blood supply (ie, SA and short gastric arteries), so embolization procedures do not threaten the vascular integrity of the spleen.

Case Presentation: A 27-year-old man presented at Saiful Anwar Hospital with chief complaint chief complaint upper left abdominal pain for about one week, persistent pain and has not diminished since the beginning. At the beginning, the pain felt at the upper left and then radiating to the epigastrium, it felt like a stabbing pain. About one week ago, epigastrium mass has started, enlarging quickly but there was no pain. There are no nausea and vomiting complaints. There are decreased appetite and decreased body weight. Patient is in a Tuberculosis treatment for one month. No defecation complaint and no trauma to the abdomen.

Discussion: Aneurysmectomy with proximal and distal ligation can be performed, with or without reconstruction of the artery after removal of the aneurysm. In some cases splenectomy, pancreatectomy or both may be necessary. Indications are splenic devascularization, caused by ligature of the artery, or aneurysmal adhesion to the pancreas. The alternative is to employ endovascular embolization, which offers the advantage of low invasivity and is of great help when patients exhibit high surgical risk. Nevertheless, one should be conscious of the possibility of complications, such as coil migration, occlusion of the incorrect branch, splenic infraction and infection,12 in addition to the need for an agile and experienced surgical team and the necessary materials always at hand, particularly for emergency situations.

Conclusion: Splenic artery aneurysms are often asymptomatic and rare and therefore difficult to diagnose. When a patient presents with left upper quadrant or epigastric abdominal pain and signs of haemorrhage or shock, SAA should be considered. Embolisation is the first line of treatment. Recanalization with haemorrhagic shock can occur, particularly after an incomplete embolisation. Therefore, a close monitoring after embolisation is needed. If rebleeding is probable, open surgery can be lifesaving.

Keywords: Rupture Aneurysm Splenic Artery, Endovascular Embolization

INTRODUCTION

The splenic artery is a blood vessel that supplies blood to the spleen. The spleen is an organ involved in regulating the immune system. Aneurysms of the splenic artery are the third most common type of aneurysm, but their prevalence is still low. The splenic artery is the most frequent site of visceral arterial aneurysms. Usually a splenic artery aneurysm occurs as a single event; rupture is frequent, sometimes occurring as the first symptom and is sometimes fatal.[1] The spleen has a dual blood supply (ie, SA and short gastric arteries), so embolization procedures do not threaten the vascular integrity of the spleen. SA aneurysm rupture rates have not been investigated fully but are reported to be as low as 0.16% and as high as 0.8% in the general population.[2] The preferred treatment method at present is endovascular embolisation of the splenic artery. This technique is considered safe and less invasive than open surgery.

CASE REPORT

Name : NS
Sex : male
Age : 27 years old
Job : Student
Address : Jl. Gadang VI/42 RT 06, Sukun, Malang
Registration number : 11322790

Anamnesis
Chief complaint : Upper left abdominal pain.
Additional complaint : Abdominal mass
History of present illness :
Patient come with chief complaint, upper left abdominal pain for about one week, persistent pain and has not diminished since the beginning. At the beginning, the pain felt at the upper left and then radiating to the epigastrium, it felt like a stabbing pain. About one week ago, epigastrium mass has started, enlarging quickly but there was no pain. There are no nausea and vomiting complaints. There are decreased appetite and decreased body weight. Patient is in a Tuberculosis treatment for one month. No defecation complaint and no trauma to the abdomen.

History of past illness:
- No similar complaint in the past
- Change in fecal consistence is denied.

Family history of illness :
- Similar signs are denied
- Alimentary tract Tumor and cancer are denied.

Physical findings:
Vital signs :
Blood pressure : 100/70 mmHg
Pulse rate : 100x/minute
Breathing rate : 22x/minute
Temperature : 36.9^{o}C

General Status:
Eye : anemic conjunctiva +/+, scleral icteric -/-
Thorax

Cor : regular heart sound I-II, no gallop, no murmur
Pulmo : vesicular breathing sound both lungs, no ronchi, no wheezing
Abdomen
Inspection : epigastrial mass, no skin colour changes
Auscultation : Normal Bowel sound, no bruit
Percussion : Tympanic, dullness above the mass
Palpation : soefel, palpated epigastrial mass, soft, immobile, no pain, same skin colour, size 5x 6cm
Extremity : warm acral, CRT < 2"

Diagnostic findings:
Laboratory findings :

10 February 2017		
Hb	10.40 g/dL	13.4 – 17.7
Leukocyte	19.520 /mcl	4.3 – 10.3 10^3
Hematocrit	30.50%	40 – 47
Trombocyte	410.000 /mcl	142 – 424 10^3
PPT	11.20	9.4 – 11.3
APTT	35.60	24.6 – 30.6
SGOT	32 U/L	0 – 43
SGPT	20 U/L	0 – 41
Albumin	2.44 g/dL	3.5 – 5.5
GDS	148 mg/dL	< 200
Ureum	26.40 mg/dL	16.6 – 48.5
Creatinine	0.87 mg/dL	< 1.2
Natrium	131 mmol/L	136 – 145
Kalium	3.75 mmol/L	3.5 – 5.0
chloride	104 mmol/L	98 – 106

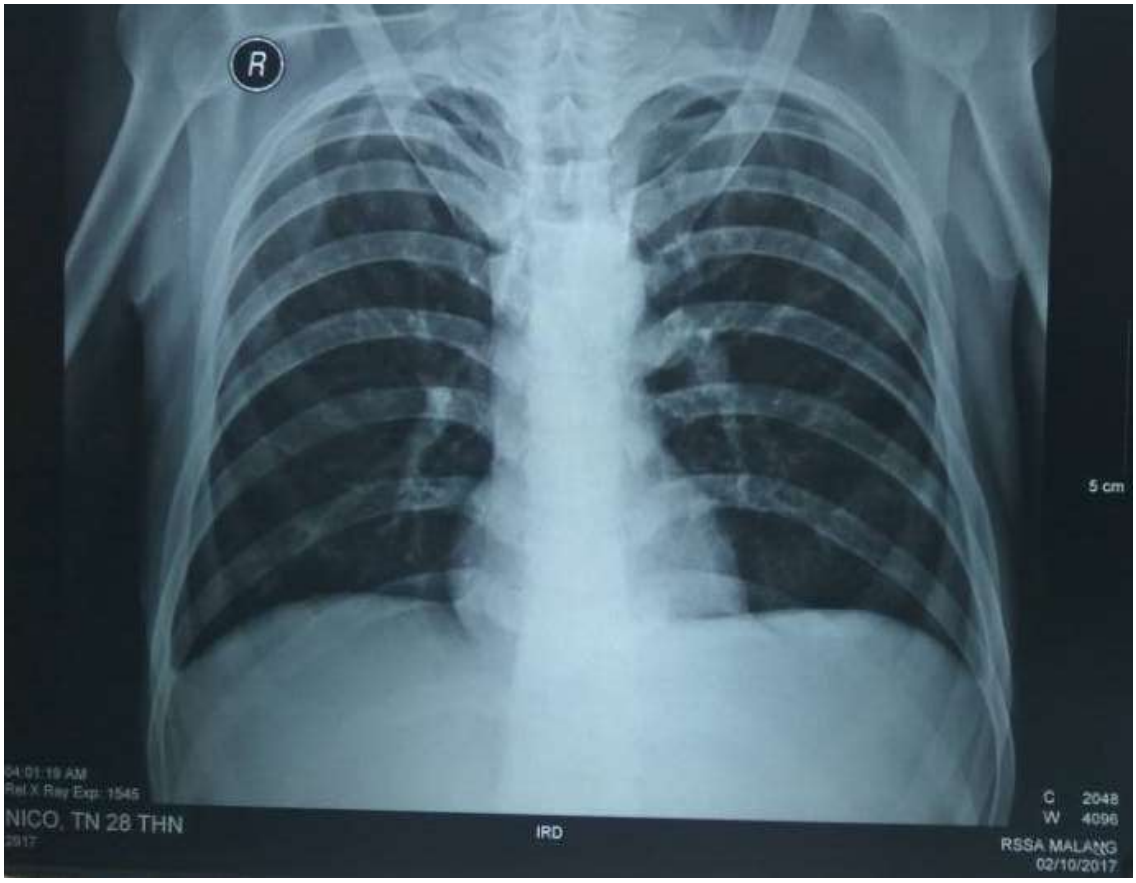
13 February 2017		
Hb	3.50 g/dL	13.4 – 17.7
Leukocyte	25.840 /mcl	4.3 – 10.3 10^3
Hematocrit	10.60 %	40 – 47
Trombocyte	336.000 /mcl	142 – 424 10^3
TB ICT	Negatif	Negatif

19 February 2017		
Hb	5.00 g/dL	13.4 – 17.7
Leukocyte	16.330 /mcl	4.3 – 10.3 10^3
Hematocrit	17.50 %	40 – 47
Trombocyte	383.000 /mcl	142 – 424 10^3
PPT	11.50	9.4 – 11.3
APTT	45.00	24.6 – 30.6

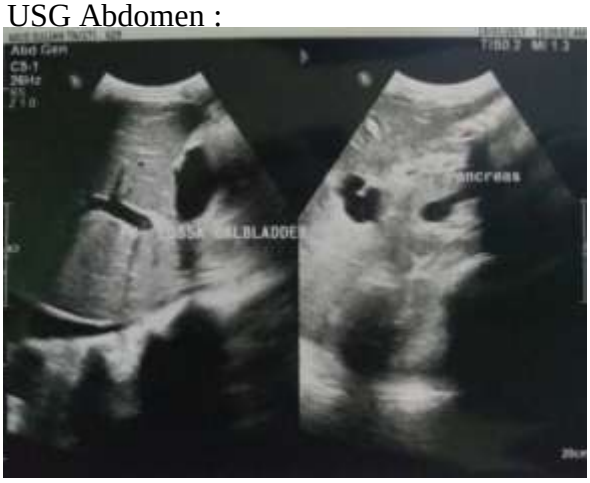
20 February 2017		
Hb	5.10 g/dL	13.4 – 17.7
Leukocyte	13.970 /mcl	4.3 – 10.3 10^3
Hematocrit	17.30 %	40 – 47
Trombocyte	406.000 /mcl	142 – 424 10^3

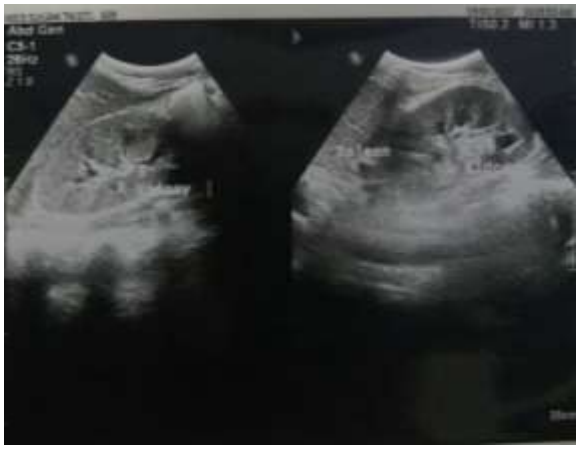
22 February 2017		
Hb	9.80 g/dL	13.4 – 17.7
Leukocyte	20.680 /mcl	4.3 – 10.3 10^3
Hematocrit	30.40 %	40 – 47
Trombocyte	492.000 /mcl	142 – 424 10^3

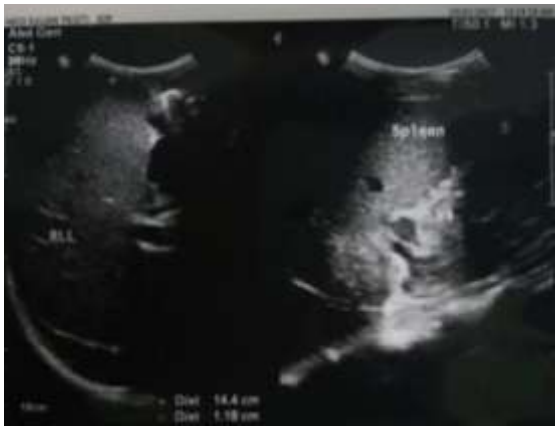
Thorax AP :

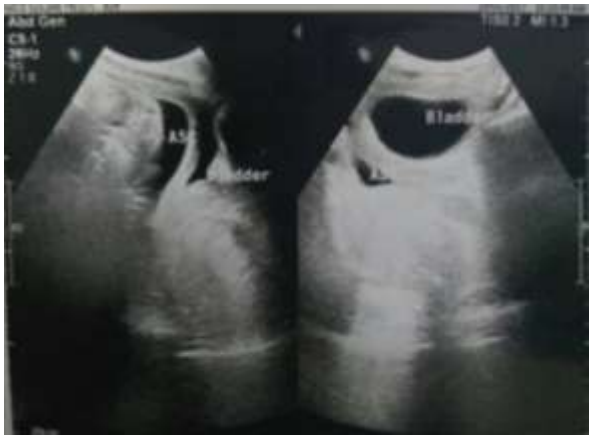


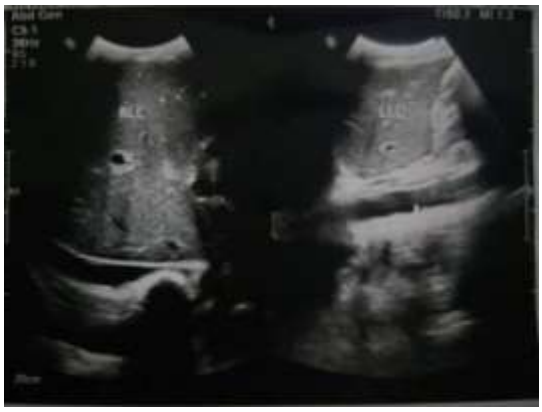
USG Abdomen :

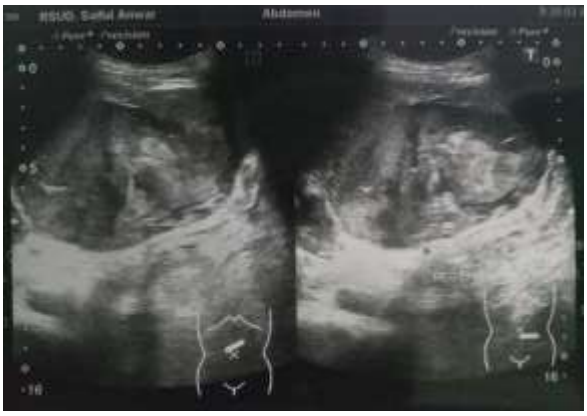






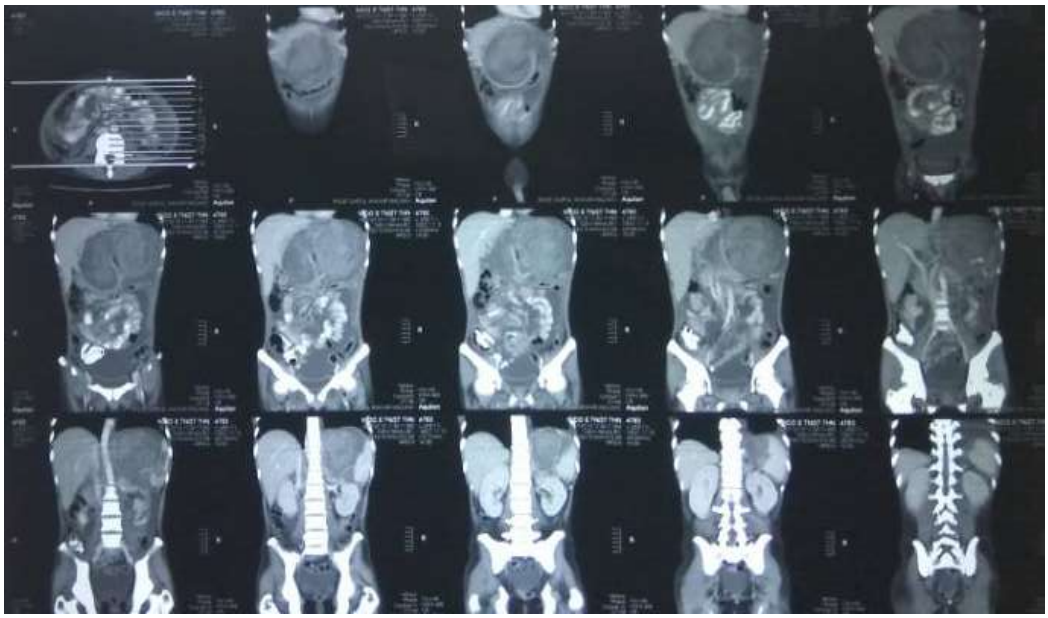


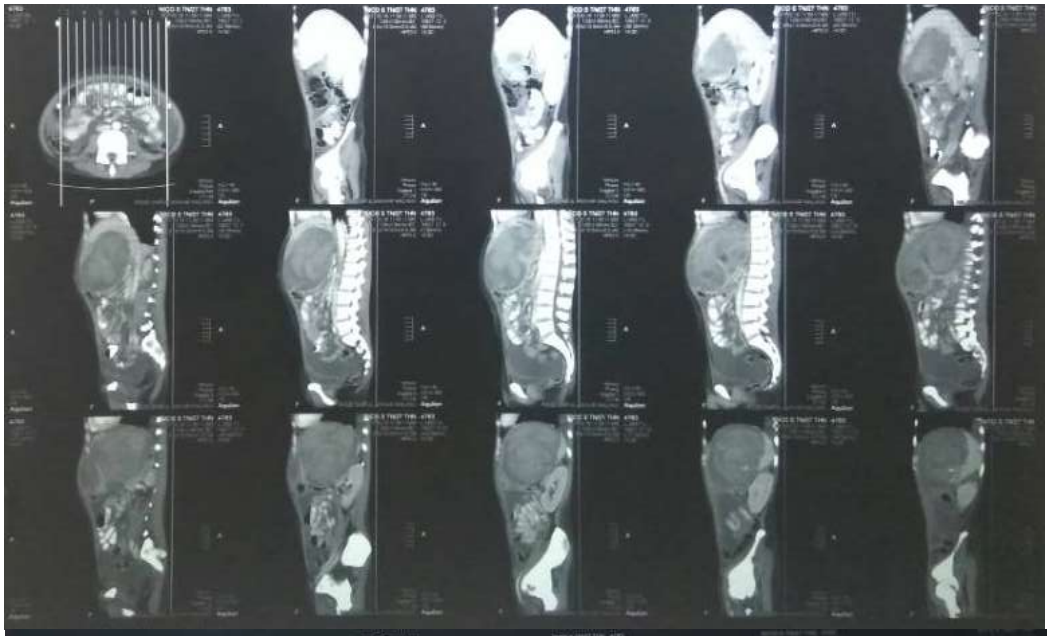


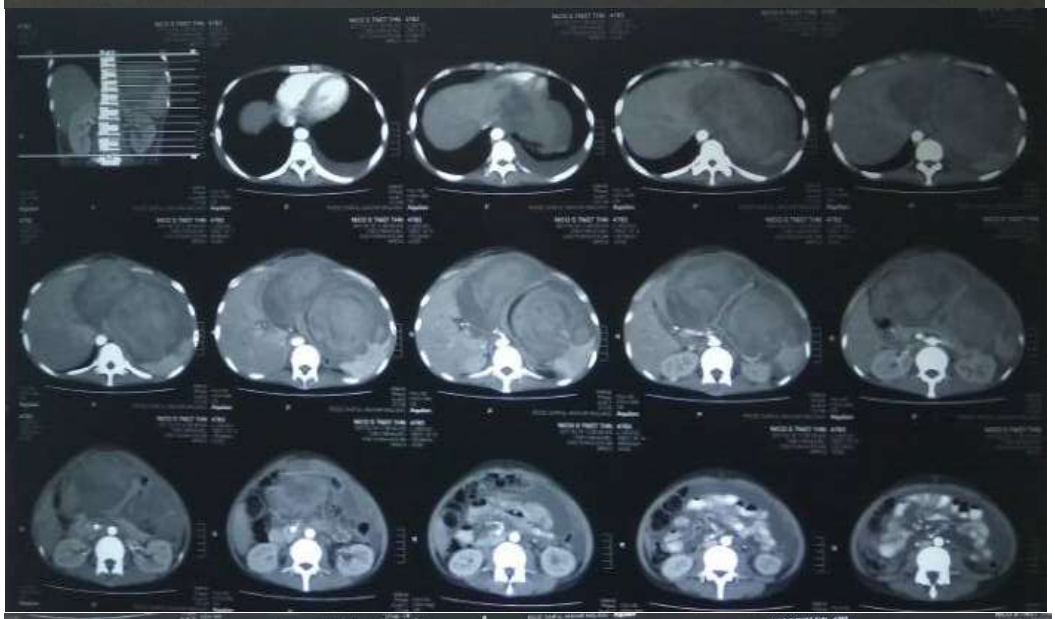


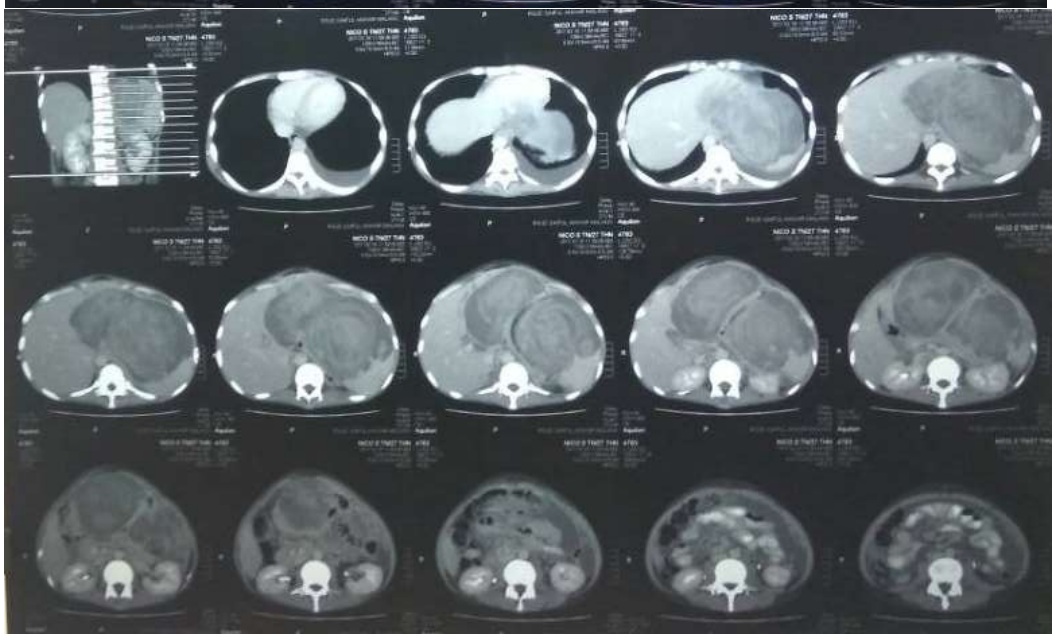
Liver :Normal size, normal homogen echoparenchyma, normal portal/vascular/billier system, pushed upward position
Vesica fellea : normal size, no thickening of wall, no sludge/stone , no widening CBD
Pancreas : difficult to evaluate
Spleen : normal size, sharp edge, smooth surface, normal homogen echoparenchyma, no nodules or cyst
Kidney D/S : normal size, non enhancing echo cortex, distinct border between medulla dan cortex, non widening pelvicocalyceal system, no visible stone/cyst/mass
Visible solid mass, heterogen iso-hyperechoic, large size at epigastric region around umbilicus, size 19x9x11cm, relative clear border, positioned inferiorly from the liver, pushing intestines inferiorly and abdominal aorta posteriorly.
Conclussion :
Intraperitoneal mass

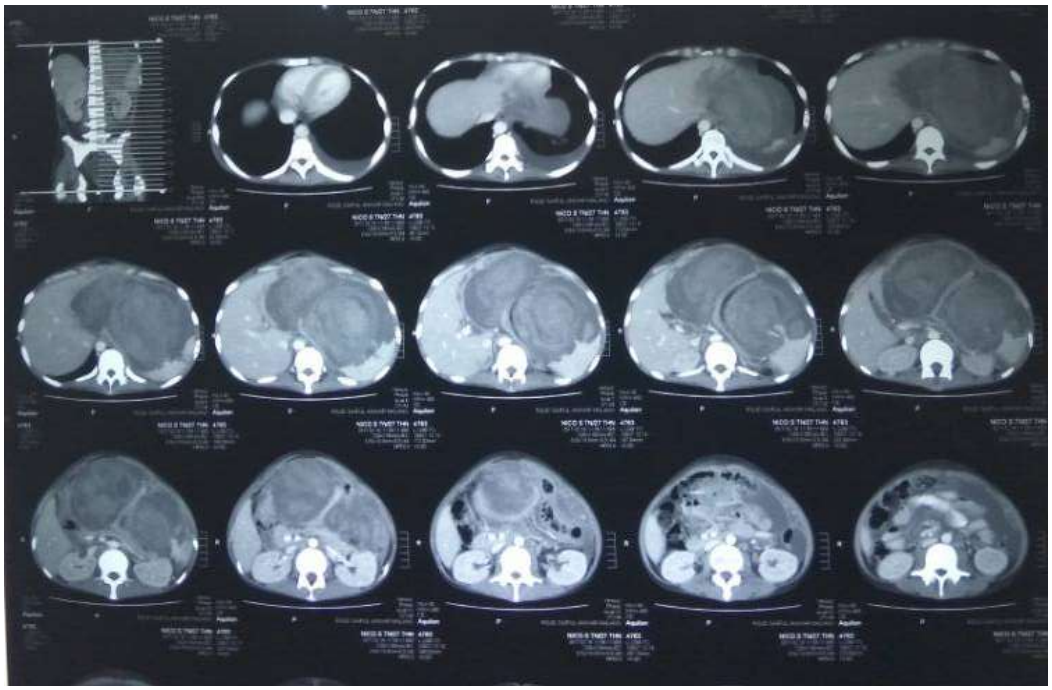
CT – scan abdomen :

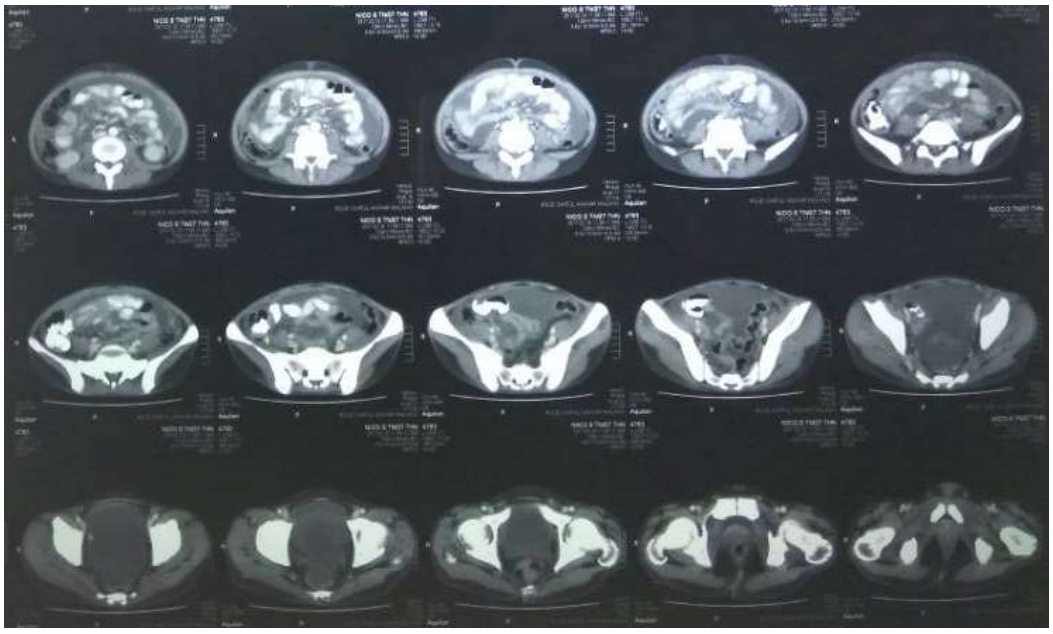


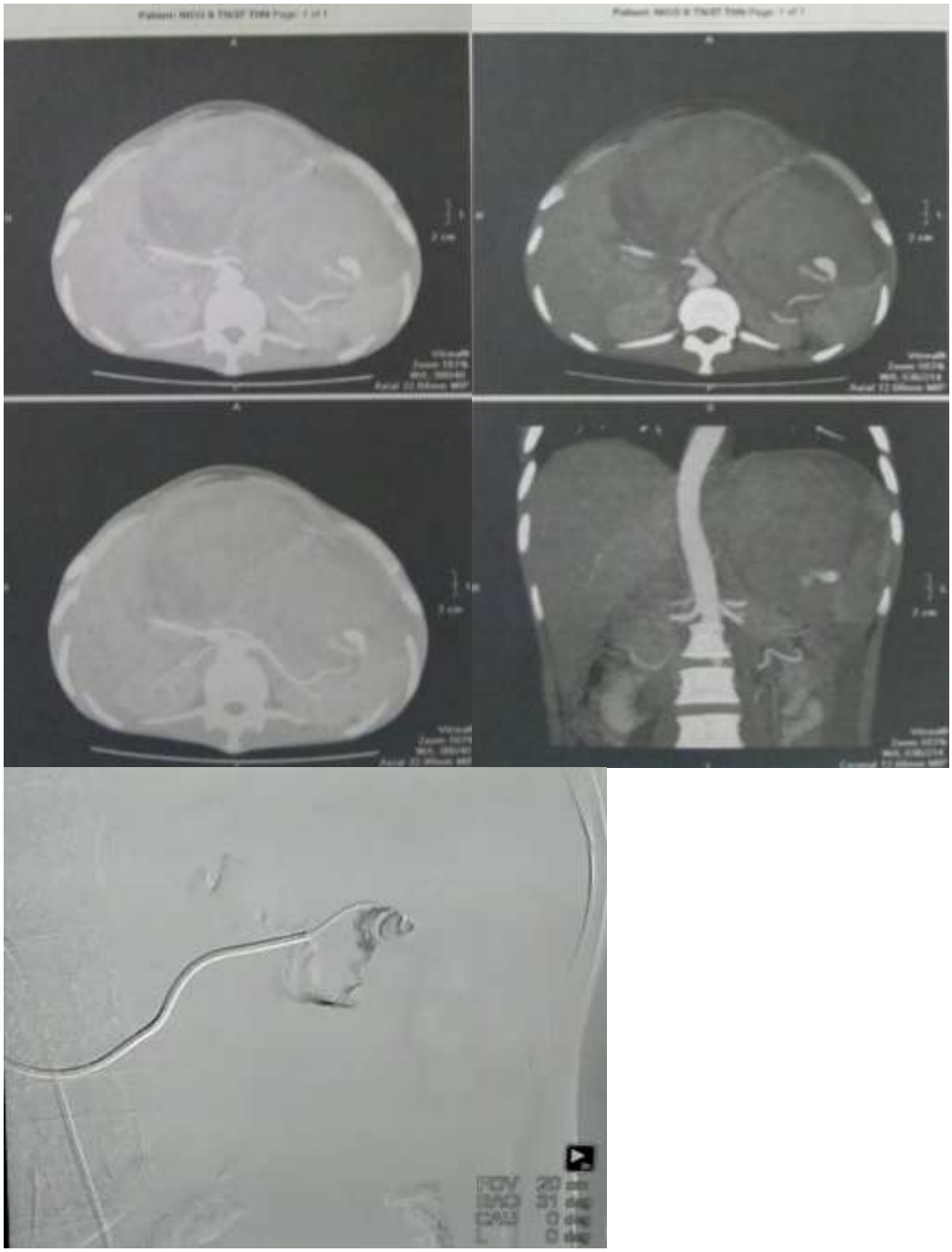












Visible solid heterogen lesion, with isohipodense cystic component, with septa, at middle upper abdomen left dominant through midline toward right paramedian, the mass pushes and narrowing the gaster posteroinferiorly, distinct border, adhered dan difficult to separate from left liver lobe and anterior side of the spleen, size 19.2x12.6x15.1cm

Liver : cc diameter ±16cm, blunt edge, heterogen density of the parenchym, visible hipodense lesion at liver left lobe, non widening portal/vascular/biliary system.

Visible liquid lesion density at left pleural cavity, perihepatic, perisplenic, perivesica

Sleen : irregular edge, non widening lienalis artery/vein

Gallbladder : normal size, no thickening of the wall, no visible slude or stone

Pancreas : normal size, no visible pathologic lesion.

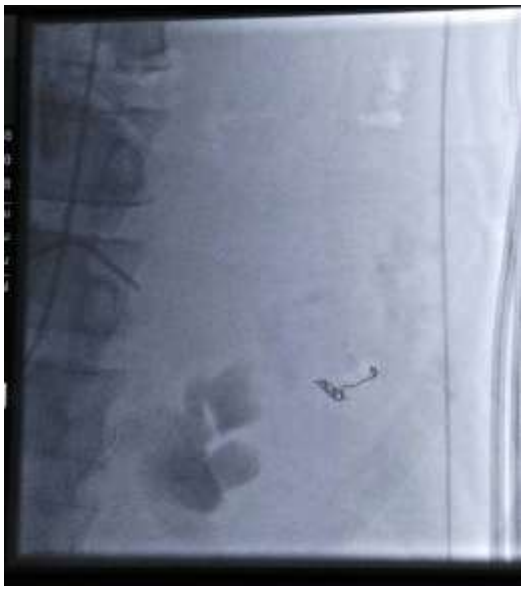
Kidney D/S : normal size, fine density of the cortex, fine border of the cortex and medulla, non widening pelvicalyceal system, no visible stone/cyst.

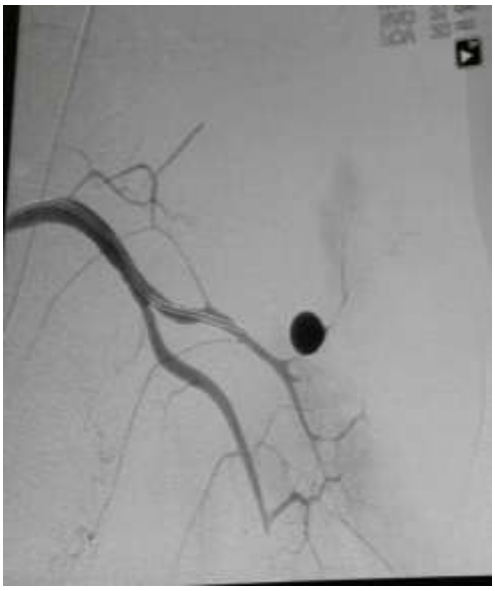
Urinary baldder : filled optimal, regular wall, no visible stone/ mass

Prostate : normal size, no visible pathologic lesion.
There are lymphadenopathy at inferior mesenteric and paraaortic, widest short axis diameter is at inferior mesenteric (±13mm)
The bones are intact, no litic or sclerotic lesion is visible.
Conclussion:
Solid lesion with cystic part in abdomen, left dominan through midline consistent with hematoma because of active bleeding of the lienalis artery.
Non specific Hepatomegaly
Lymphadenopathy at inferior mesenteric
Ascites

Working diagnosis
Rupture of aneurysm lienalis artery
On Tuberculosis treatment Category I (2 months)

Therapy:
Embolization with coiling 3mm and 4mm from femoral artery





DISCUSSION

Splenic artery aneurysms are the most common aneurysms of the abdominal viscera.1 A majority of these aneurysms occur in multiparous women (4:1) with a mean age of 55. The incidence of rupture ranges from 3 to 10% and risk is higher during physical effort, including labor, leading to major bleeding and fatality rates of 10 to 25.9 Mortality among pregnant women can reach 70% and among portal hypertension patients it can reach 90%.[3]

The pathogenesis of splenic artery aneurysms is related to vessel wall fragility and increased blood pressure and/or flow through the vessel. Many different conditions are related to the emergence of splenic artery aneurysms, including atherosclerosis, portal hypertension, multiparity, intra-abdominal inflammatory processes, abdominal traumas, connective tissue diseases, congenital aneurysms and mycotic emboli.5 - 7 The majority of these aneurysms are located in the distal third of the artery and they may be found in conjunction with other aneurysms of the same artery or other vessels.[4]

Diagnosis can be confirmed by Doppler ultrasound. This examination can detect the aneurysmal mass and any adhesion to adjacent organs, in addition to detecting other

concomitant diseases. Arteriography is generally necessary because it can show aneurysmal vascularization, detect vascular anomalies, provide etiologic diagnosis (as in muscle dysplasias) and can also delineate other visceral aneurysms, in addition to offering the possibility of endovascular treatment.[5]

Splenic artery pseudoaneurysms are less prevalent than true SAA. They differ from true SAA in that the dilatation occurs following the disruption of one or more layers of the vessel wall. Splenic artery accounts for the majority of splanchnic pseudoaneurysms. Unlike true SAA, they have a slight male predominance. The underlying causes in most of the cases are trauma, infection, or weakening of the splenic artery wall from exposure to pancreatic enzymes.[6]

The majority of aneurysms are saccular and of small size. Generally they are asymptomatic, but they may cause symptoms of abdominal pains at the hypochondrium and the left flank, or epigastrium, radiating toward the scapular region. If rupture occurs, blood may leak into the peritoneal and retroperitoneal cavities, the intestinal tract or the splenic vein(creating a fistula). In such cases, symptomology becomes significant, with peritoneal irritation, digestive bleeding and shock.[5,6]

Even though vascular anomalies are an atypical etiology of hematemesis, they should always be suspected in cases of recurrent hematemesis and a differential diagnosis should be arrived at as quickly as possible. Treatment in emergency cases can be by open surgery or using endovascular techniques.[3]

If open surgery is used, aneurysmectomy with proximal and distal ligation can be performed, with or without reconstruction of the artery after removal of the aneurysm. In some cases splenectomy, pancreatectomy or both may be necessary. Indications are splenic devascularization, caused by ligature of the artery, or aneurysmal adhesion to the pancreas. The alternative is to employ endovascular embolization, which offers the advantage of low invasivity and is of great help when patients exhibit high surgical risk. Nevertheless, one should be conscious of the possibility of complications, such as coil migration, occlusion of the incorrect branch, splenic infraction and infection,12 in addition to the need for an agile and experienced surgical team and the necessary materials always at hand, particularly for emergency situations.[3,4]

Described the case of a 27-year-old patient with a splenic artery aneurysm that had ruptured into the gastrointestinal tract and was successfully treated endovascularly.

CONCLUSION

Splenic artery aneurysms are often asymptomatic and rare and therefore difficult to diagnose. When a patient presents with left upper quadrant or epigastric abdominal pain and signs of haemorrhage or shock, SAA should be considered. Embolisation is the first line of treatment. Recanalization with haemorrhagic shock can occur, particularly after an incomplete embolisation. Therefore, a close monitoring after embolisation is needed. If rebleeding is probable, open surgery can be lifesaving.

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