

Beyond the 4 T’s - An unusual cause of major haemorrhage in the obstetric patient

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Background

- Splenic artery aneurysm (SAA) rupture during pregnancy is a rare but life-threatening event.
- The incidence is approximately 0.01% in the general population, and is more frequent and dangerous during pregnancy.
- Maternal mortality can reach up to 75%, while fetal mortality may be as high as 95% without timely intervention.¹
- Anaesthetic goals include rapid maternal stabilisation, facilitating urgent delivery, activating massive transfusion protocol, and coordinating multidisciplinary care with postoperative intensive care.²

Case Presentation

- A 27-year-old G2P1 woman at 36 weeks presented with acute chest pain, abdominal pain, and breathlessness.
- She arrived critically unwell with hypotension (SBP 50 mmHg), reduced GCS, and signs of Grade IV hypovolaemic shock.
- Bedside ultrasound showed intrauterine foetal death and free intra-abdominal fluid, suggesting uterine rupture.
- Emergency laparotomy and hysterectomy were performed under RSI (ketamine, propofol, fentanyl, rocuronium).
- Arterial and central access were secured; cell salvage was used.
- Investigations revealed severe acidosis, anaemia (Hb 55 g/L) and raised lactate.
- ROTEM guided transfusion of blood products and fibrinogen.

Surgical Findings and Course:

- A midline laparotomy and emergency hysterotomy were performed, with delivery of a stillborn infant.
- Further exploration revealed active arterial bleeding from the splenic hilum, secondary to a ruptured splenic artery pseudoaneurysm. Estimated blood loss was 5.6 litres.
- A splenectomy was performed and haemostasis achieved.

Postoperative Management:

- The patient remained intubated and was transferred to the intensive care unit for ongoing resuscitation and organ support.
- Required continuous haemofiltration, and additional blood products administered.
- Successfully extubated and discharged from ICU, and made a full recovery, leaving hospital two weeks after admission.

Discussson

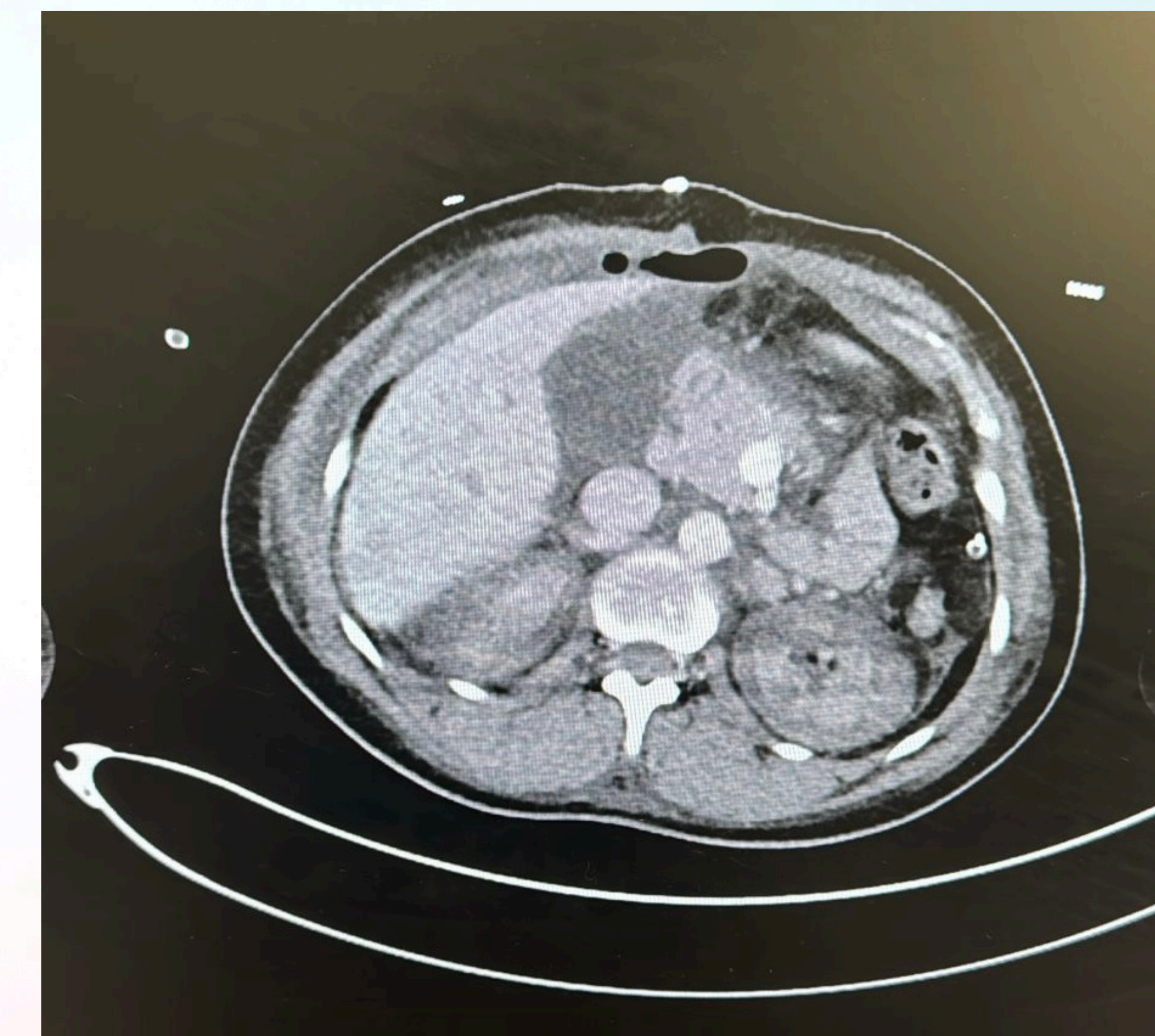
- This case highlights the importance of considering non-obstetric causes, such as rupture of the splenic artery, in cases of intra-abdominal haemorrhage in pregnancy.
- Its clinical presentation is often indistinguishable from other common causes of intra-abdominal haemorrhage in pregnancy, making preoperative diagnosis challenging.
- In early pregnancy, splenectomy may permit a continued and uneventful pregnancy. In later gestation, a combined approach involving splenectomy and caesarean section offers the best chance for maternal and fetal survival.
- Anaesthetic considerations include rapid haemodynamic stabilisation, early administration of blood products, vigilant intraoperative monitoring, and postoperative intensive care support.³
- A multidisciplinary team approach is essential to optimise maternal and fetal outcomes in such emergencies.

Conclusion

Anaesthetic management in maternal collapse extends beyond routine obstetric care — requiring vigilance for rare vascular causes, rapid airway control, haemodynamic rescue, and teamwork in damage control surgery. While the “4 T’s” remain a useful initial framework, anaesthetists must also consider non-obstetric, visceral vascular events like splenic artery pseudoaneurysm rupture in the differential.

Products/Fluid	Units (Intra-op)	Units (Post-op)
Compound Sodium Lactate	6 litres	-
Packed red blood cells (PRBCs)	7 units	4 units
Fresh Frozen Plasma (FFP)	4 units	4 units
Tranexamic acid	2 grams	-
Fibrinogen concentrate	5 grams	
Cryoprecipitate	-	2 units
Platelets	-	1 unit
4% human albumin	-	1 unit

Fluid & product administration



CT Abdomen post splenectomy

References

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3. Wang C, Tu X, Li S et al. Spontaneous rupture of the spleen: a rare but serious case of acute abdominal pain in pregnancy. Journal of Emergency Medicine. 2011 Nov; 41(5):503-6.