



UNVEILING ACCELERATED HYPERTENSION: A CASE STUDY OF POST-SPLENECTOMY HYPERTENSION IN PREVIOUSLY NORMOTENSIVE INDIVIDUAL WITH THORACOABDOMINAL TRAUMA

General Medicine

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ABSTRACT

Splenectomy often associated with multiple vascular complications. We present a case of Road traffic accident(RTA) for which splenectomy was done .grade 3 splenic injury scale by American Association for Surgery of Trauma(AAST) that resulted in accelerated hypertension in a previously normotensive 68yrs old male. Patient was managed aggressively with IV anti-hypertensive. On follow up patient was normotensive.

KEYWORDS

INTRODUCTION

Complications following splenectomy include destruction of red blood cells, increased risk for severe infections from bacteria such as *Streptococcus pneumoniae* and *Neisseria meningitidis*, thrombocytosis (which can cause blood clots), increased red and white blood cell counts.

Infections, particularly pulmonary and abdominal sepsis, constitute the majority of the complications following splenectomy. The mortality rate from postoperative sepsis is substantial. Atelectasis, pancreatitis/fistula, pulmonary embolism and bleeding at the operative site are also relatively common occurrences following splenic removal (1).Risk of the post-splenectomy septic syndrome is lifelong.

Case Report

A 68 years old male with no prior illness presented to the emergency with alleged history of RTA, came with complaints of chest and abdominal pain with shortness of breath.. Patient had distended abdomen with presence of guarding and rigidity. Patient had GCS score of 14/15 and found to have blood pressure 100/60mmhg and heartrate 110bpm.

Chest X-ray (PA view) showed undisplaced fractures of 6th-9th ribs (Fig-1).



Figure 1-Chest X-ray PA view

CECT chest, abdomen and pelvis revealed splenic injury (AAST grade 3), undisplaced fractures of 6th-9th ribs and moderate hemoperitoneum. USG chest showed B/L pleural effusion of 1500-2000ml on left side and minimal amount on right side.(Fig-2, 3)



Figure-2-CECT thorax

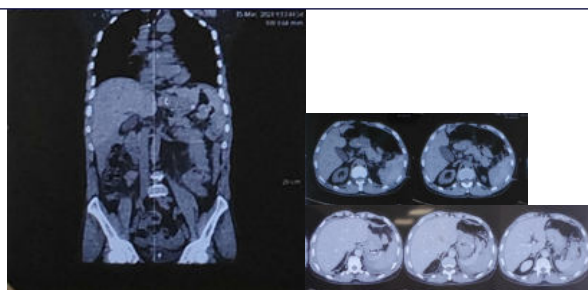


Figure-3-CECT abdomen

Patient was taken for emergency surgery and splenectomy was done. He had hypotension during surgery due to blood loss and was given 04 units of packed blood. Patient had low blood pressure during the initial 02 days after surgery. From day-03 patient developed increased BP 180-220/120-140 mm HG and .Colour Doppler flow imaging (CDFI) showed DVT involving distal SFV, popliteal vein and posterior tibial vein. Patient was started on IV LMWH (Enoxaparin 60mg/0.6ml) for management of DVT)and IV Furosemide and Nitroglycerine (NTG) for 5-7 days for accelerated hypertension and was thoroughly investigated for secondary causes of hypertension .Lab reports showed persistent leukocytosis, hypokalemia and deranged LFT and RFT for initial few days after surgery. Serum cortisol and thyroid function test levels were normal. Non-contrast CT of the head showed no focal abnormalities, urinary vinyl Mandelic acid levels were within normal limits and fundus examination revealed no evidence of papilledema or raised intracranial tension. The antihypertensives were slowly tapered down to only oral diuretics after post-op 11.

By day 14 patient was normotensive without antihypertensive and was given polyvalent pneumococcal, Haemophilus influenzae b and meningococcal vaccine. The patient did not have further attacks of hypertension and was eventually discharged on post-op day 20.

At his follow-up review visit after 6 weeks, the patient had a normal blood pressure. Routine investigations were repeated and found to be normal and no target involvement for hypertension.

DISCUSSION

Splenectomy has been linked to multiple vascular complications post procedure possibly because of the hypercoagulable state occurring after removal of the spleen(2) . Possible mechanisms include persistence of abnormal erythrocytes and other procoagulant particles that normally get filtered by the spleen, reduced level of anticoagulant proteins C and S in the circulation, altered lipid profiles, endothelial activation and increased blood viscosity. No cause, however, was identified for the sudden development of accelerated hypertension in this case. (3)

Though there are reports of pulmonary and portal hypertension post-splenectomy(4) , there have been no documented cases of accelerated systemic hypertension following splenectomy except in a case report

of an 8 year old suffering from hereditary spherocytosis underwent splenectomy for chronic severe anemia and had malignant systemic hypertension which resolved spontaneously(5).

Accelerated hypertension may have resulted either due to the excessive handling of adrenals during surgery or post traumatic response of the adrenals (5). This has been referred to as the effect of “angry adrenals”. Speculative mechanisms include micro emboli or ‘in situ’ thrombosis with medial hypertrophy and intimal fibrosis blocking small renal vessels or vessels supplying the vasomotor centre, hidden undiagnosed catecholamine secreting tumour, or endothelial activation as a result of post splenectomy hypercoagulability leading to peripheral vasospasm resulting in high-blood pressure.(6)

REFERENCES

1. R Buzel , L Barbier, A Sauvanet, B Fantin. Medical complications following splenectomy. Journal of visceral surgery 153 (4), 277-286, 2016.
2. Qu Y, Ren S, Li C, Qian S, Liu P. Management of Postoperative Complications Following Splenectomy. Int Surg. 2013;98(1):55–60.
3. Hirsh J, McBride JA, Dacie JV. THROMBO EMBOLISM AND INCREASED PLATELET ADHESIVENESS IN POST SPLENECTOMY THROMBOCYTOSIS. Australas Ann Med. 1966 May;15(2):122–8.
4. Delayed pulmonary hypertension following splenectomy for congenital spherocytosis. Intern Med J. 2004 Apr;34(4):214–6.
5. Abhimanyu Varshney, Shilpa Sharma, Santosh Dey, and Devendra K Gupta. Malignant systemic hypertension, encephalopathy and bradycardia following splenectomy for hereditary spherocytosis. 2015; 2015: bcr2014209029.
6. Hooper MM. Pulmonary Hypertension after Splenectomy? Ann Intern Med. 1999 Mar 16;130(6):506.