SPLENECTOMIZED PATIENT

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1. Functions of the spleen
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3. Splenectomy – Elective Vs Emergency
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6. Postoperative complication of splenectomy
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Functions of the spleen

- Haematological
  - Maturation & destruction of RBC s.
  - Removal of nuclear remnants (Howell-Jolly bodies) , denatured haemoglobin (Heinz bodies) and iron granules (Pappenheimer bodies) from RBCs.
  - Haemopoiesis in utero.
  - Reservoir for approximately 8% of the red cell mass.
  - Main storage site for platelets.

Functions of the spleen

- Immunological
  - Contains 25% of the body's lymphoid tissue.
  - Important role in cell mediated immunity.
  - Circulating antigens are trapped by the spleen trigger IgM production.
  - Production of opsonins, tuftsin & properdin, important components of the alternative pathway of complement activation.

    (Needed for opsonization & phagocytosis of encapsulated organisms)

Indications for Splenectomy

- Trauma
  - Accidental
  - Operative
- Oncological
  - Part of *en block* resection
  - Diagnostic
  - Therapeutic
- Haematological
  - Spherocytosis
  - ITP
  - Hypersplenism
- Portal hypertension
  - Variceal surgery

Elective vs Emergency splenectomy

Effects of Splenectomy

- Haematological changes
  - Leucocytosis & thrombocytosis

    Peaks at 7-10 days

    If thrombocytosis with platelet count> 1,000,000 /mm2 low dose aspirin therapy is recommended.

  - Blood film changes with demonstration of abnormal RBC particles in the circulation

Effects of Splenectomy

- Immunological changes

  Age related.

  greatest in patient's < 1 year old

  – IgM levels fall & take 4 years to return to normal.

  – IgA levels rise.

  – IgG levels generally remain unaffected.

  – Opsonin levels reduce immediately, resulting prolonged impairment of phagocytosis of encapsulated organisms.

Effects of Splenectomy

Increased risk of infections with,

Streptococcus pneumoniae
Haemophilus influenzae
Neisseria meningitides
Escherichia coli
Malaria etc.

Risk is greater in

young patients,
patients treated with chemotherapy / immuno suppressive therapy,
patients who have undergone splenectomy for sickle cell disease / autoimmume anaemia / thrombocytopaenia

Preoperative preparation for splenectomy

- Coagulation profile – If proloned need correction
- Platelet count

  If thrombocytopaenic need platelet transfusions to achieve pre–op levels of > 50’000/mm2.

  For those with thrombocytopaenia, preservation of platelets during the operation & early post operative period is needed.
- If haemoglobin level is low need pre-op correction & also preservation of blood for the surgery.
- Arrange appropriate Antibiotic prophylaxis at surgery.
- Pre op immunization in elective cases.

Postoperative complications of splenectomy

- Continuing haemorrhage from splenic bed.
- Basal atelectasis, mainly on left.
- Haematemesis from gastric mucosal damage & gastric dilatation.
- Subphrenic abscess formation
- Pancreatic & gastric fistulae formation (rare)
- OPSI – Opportunist post-splenectomy infection

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Prevented by,

- Patient information.
  - spleen has been removed
  - risk of infection
  - seeking early medical advice

- Antibiotics prophylaxis.
  - Daily dose of Penicillin / Amoxicillin / Erythromycin

OPSI – Opportunist post-splenectomy infection

Prevented by,

- Immunization
  - –Pneumococcal vaccine
  - –Haemophilus influenae type b vaccine
  - –(?Meningococcal vaccine)

If an elective splenectomy – vaccinate 2 weks prior to the surgery

If an emergency splenectomy – Vaccination to be arranged 2 weeks after the surgery

OPSI – Opportunist post-splenectomy infection

Prevented by,

- Prophylactic antimalarial measures when visiting malaria endemic areas.

Thank you