Splenorrhaphy Versus Splenectomy

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Özet: Dalak tamiri "Splenorrhphy" travmatik yaralanmalarında emniyetli bir metod olarak gözönünde bulundurmalıdır.

Dalağın parçalandığı koptuğu ve multiple injuri olan durumların dışında splenorrhaphy, aksi halde splenektomi uygulanmalıdır.

Biz Ocak 1988 ile Aralık 1988 arasında 16 travmatik splenik yaralanma olgusunu yayınlıyoruz. Splenorrhaphy 10 olguda (62.2%) topikal hemostatik sentetik materyal "Gelform" uygulanmasına ilave olarak katgut ve omental parça ile yapıldı. Mortalite, 10% oranında gerçekleşti cerrahi teknik dışı nedenlerden dolayı %10 oranında gerçekleşti.

Splenektomi uygulanan 6 olguda ise mortalite 2 olguda izlendi (33.3%), multipl intraabdominal injurilere bağlı olarak gelişti.

Anahtar Kelimeler: Splenorrhaphy-Splenectomi.

Multiple immunologic defects such as depressed opsonisation, phagocytosis and IgM levels appear to make the splenectomised patients more susceptable to a variety of infections caused by capsular organisms and possibly viruses (1-2). The major worry after splenectomy for trauma is the occurance of over whelming post splenectomy infection "OPSI" usually within 2 years of operation (3,4,5) with an incidance of 2.2-2.5% with 50%mortality.

Summary: Splenorrahaphy considered as a safety procedure in the traumatic splenic injury and should be attempted in all patients except when the spleen is shattered, or avulsed and in multiple concomitant injuries where splenectomy is advised. We report on 16 patients of traumatic splenic injuries from Jan. 1985 to Dec. 1985 In 10 patients (62.2%) splenorrahaphy was performed with catgut and omental patch reinforcement in addition to topical haemostatic synthetic material "Gelfoam" application with mortality of 10% due to unrelated causes. Splenoctomy performed in 6 patients (37.8%) with mortality of 2 patients (33.3%) due to muliple associated intra-abdominal injuries.

Key Words: Splenorrhaphy-Splenectomy

PATIENTS AND METHOD

Sixteen patients with traumatic splenic injiries were treated in AL-TAMIM Hospital during the period between Jan. 1985 to Dec. 1985. There were 9 patients (56%) male and 7 patients (44%) female. The age range were from 1.5-51 years. Maximum age incidence were in Ist and 2nd decades (12 patients 75%). The mechanism of injury were blunt injury in 13 patients (81.25%). (Table No.1)

The basic principles of management of the

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Table I:



patients included: Active resuscitation, Emergency laparatomy, Adequate drainage of peritonal cavity and supportaive post-operative care. Emergency exploratory laparatomy was performed after resuscitation through upper mid-line incision.

The splenic injuries found ranged from simple superficial laceration, deep parenchymal laceration, shattered splenic tissues and splenic pedicle injury.

Ten patients (62.2%) of sixteen splenic injuries were managed by splenic repair by catgut suturing with omental patch reinforcement and application of synthetic absorbable haemostatic material "Gelfoam". The remanant 6 patients (37.2%) were managed by splenectomy. In all cases a tube drain were left in splenic bed and removed after (3-5) days. The appropirate management of the associated injuries wer done at the same time.

The organs affected by injuries were: (Table No.2) Colon 2, small bowel 1, superior mesenteric vein 1, Chest 1, Stomach 2, Diaphragm 1, Retroperitoneal haematoma and musculo-skeletal injury 5.

Table II: Associated Injuries in splenic trauma:

1. Colon 2.

- 2. Small Bowel 1.
- 3. Superior Mesenteric Vein 1.
- 4. Diaphragm 1. 5. Lung 1.
- 5. Lung 1.
 6. Stomach 2.
- 7. Fracture 5.
- 8. Retroperitoneal Haematoma 1.

The main criteria for selection of the patients of splenic repair were mild or moderate grade of splenic injury with small number of associated intra-abdominal injuries while splenectomy is done because of magnitude of the splenic injury with shattered or avulsed spleen and in multipl injured patients with hypotention.

RESULTS

The prognosis of splenic injury is directly related to the severity of the injury and to the number of associated injuries (Intraabdominal or extra abdominal). In our study, ten of patients (62.2%) have underwent splenic repair with other six (37.2%) ended by splenectomy. 13 patients survived and 3 patients (18.75%) died (One with spleorrahaphy, two with splenectomy". All three patients died within Ist 24 hours of post operative period.

Severity of the splenic injury accompained by multiple intra abdominal is clear in reviewing these three cases who ultimetly died:

Case 1: Bullet injury to te left lower chest with splenic injury and left lung, left dome of diaphragm, stomach and fracture of the left humerus.

Case 2: Bullet injury to the abdomen with injuries to stomach, spleen, transverse colon, descending colon, duodeno-jejunal junction and jejunum.

Case 3: Blunt injury with extensive lacerati-

on of both right and lenft lobe of the liver with splenic injury.

All above three patients were shoked at time of presentation. One out of 13 patients who sustained blunt injury died, while two out of 3 patients with bullet injury died this is because of devasating tissue damage that the high velocity bullet cause and because of multiple associated intra abdominal injuries. The main post operative complication was pulmonary complications (3 patients). No repaired spleen in the entire study required re-operation for bleeding from the-splenorrahaphy site.

DISCUSSION

Traumatic splenic injuries are not uncommon, in spite of the fact that the spleen seems well protected by the ribs and muscular parietes.

Splenorrahaphy is a desired goal in all patients with splenic injuries. It is of interest that splenorrahaphy by suturing of the spleen was routinly performed at the turn of the century and for the next 30 years (6,7), when splenectomy became a safety operation, splenorrahaphy disappeared for another 30 years.

The splenorrhaphy generally performed in patients with a smaller number of associated intra abdominal unjuries and the less sever grades of splenic injury. Splenorrahaphy can be performed approximately in 50% of patients using standered technical of repair with no risk of rebleeding from the repaired spleen .(8) In our study splenorrahaphy was performed in 10 patients (62.2%) with careful selection of patients with mortality of 1 patient (10%) due to unrelated cause.

Further technical modification in splenic preservation include combining the use of absorbable mesh with haemostatic either in sheet or pladget from with additional advantage of these material is that its absorbable nature allow its use despite peritoneal contamination and even the use of polyglycolic acid in the presence of contamination has experimented superiority over chromic catgut by the bacterial inhibitory effect of breakdown products of polyglycolic acid. (9)

The new techniques of splenic preservation includes ultrasonic dissection. (10) gluing with concentrated human fibrinogen (11) and fibrous tissue adhesive in conjugation with collagen fleece (12), ligation or percutanous angiographic embolisation of the splenic artery (13,14) can undoubtly arrest haemorrhage, but there application is pending confirmation of maintenance of physiological function in devascularised spleens.

Confirmation of blunt splenic injury alone, particularly in view of modren imaging technology "Nucleotide spleen scan and computed tomography", no longer automatically necessitate operative intervention.

Selective criteria for non operative management includes; first that the patient be absolutely haemodynamically stable from the moment of injury through definitive treatment, second; peritonial signs should be minimal or absent on physical examination; third cosideration is a maximal transfusion requirement of 2 units of blood for the splenic injury. (15) However non operative approach is not applicable to patients with penetrating splenic trauma because more than 90% of these patients have associated injuries that usually do nessesitate surgical correction.

In spite of success of non operative treatment in certain cases there are three arguments used in support of routine operative intervention in all cases of splenic trauma, first; the high incidence of associated abdominal injuries that might be over looked, prolonged observation and limited physical activity associated with non-operative management and finally a theoretically opinion that the splenic vasculature in adults differs from that in children in regard to its inability to contract and to cease bleeding spontanously. In our study all patients with peritoneal irritation and being haemodynamically unstable and penetrating injuries underwent exploratory laparatomy with associated intra abdominal injuries in 4 patients 25% which needs surgical intervention by itself.

Concomitant injuries to other organs are frequent with major trauma and account for high mortality of splenic injury "15-25%". In our study there was a mortality of 3 patients (18.75%) with multiple intra abdominal injuries and they all were shocked at presentation.

Post splenectomy sepsis can occur in patients with auto transplanted spleens and in those with splenosis as well studies demonstrating that at least third of the functioning splenic mass must be retained along with its inherent arterial blood supply to ensure competent immunologic function (15).

In splenectomised patients long-term penicil-

KAYNAKLAR

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lin prophylaxis should be seriously considered in children.

Pneumovax confers incomplete protection against all types of pneumococci, does not produce type specific antibody in all immunised patients and has not prevented pneumococcemia in some immunised patients but still some advocate pneumovax routinly in all patients as well as haemophilus vaccine, to children younger than 10 years old (16,17).

In splenectomical patients, the importance of seeking early medical attention in the future, even when elatively minor symptoms of infection occur is stressed. We continue to advocate splenic preservation whenever possible and we have succeeded in (62.5%) of cases neverthless we don't hesitate to abandon repair if satis-factory haemostasis can not be achieved or most often when associated life threatening injuries takes priority.

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