The Pattern Of Indications, Complications Of Splenectomy Personal Experience

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ABSTRACT:

BACKGROUND:

A prospective study of Splenectomy personal experience,with changing pattern of indications.

METHOD:

During the study period (Feb, 1990-Jan, 2006), a total of 411 splenectomies performed in erbil governate for different indications.

RESULTS:

The study included 411 patients, the age rang were 4– 65 years. Out of 411 cases 201 cases were due to trauma (48.9%).

CONCLUSION:

Trauma of different types remains the most common indication for splenic surgery & complications like gastric or pancreatic fistula is historical complications.

KEY WORD: Spleenectomy.

INTRODUCTION:

Galen is credited with the phrase (The spleen is an organ full of mystery). Fetal splenic tissue develops from condensation of mesoderm in the dorsal mesogastrium. The weight of the normal adult spleen is 75-250 gm; it consists of white & red pulp that is surrounded by serosa & capsule that contain muscle.

The spleen has following functions:-

1. Immune function.
2. Filtration.
3. Pitting.
4. Reservoir function.
5. Cytopoiesis.

Prior to 1970 the treatment for traumatic ruptured spleen was splenectomy, the recognition that patient without spleen have an increased risk of death from overwhelming infection lead the surgeons to consider the method of splenic preservation & significant changes have occurred in the management of splenic injuries in the last two decades [1].

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PATIENTS & METHODS:

A personal prospective review of 411 patients' scheduled for splenectomy done in Erbil Governate in three hospitals (Rizgary teaching hospital, casuality & Hawler private hospital) from Feb, 1990-Jan, 2006. The diagnosis was on clinical bases & blood examination, augmented by ultrasound examination & confirmed by operation in traumatic cases.

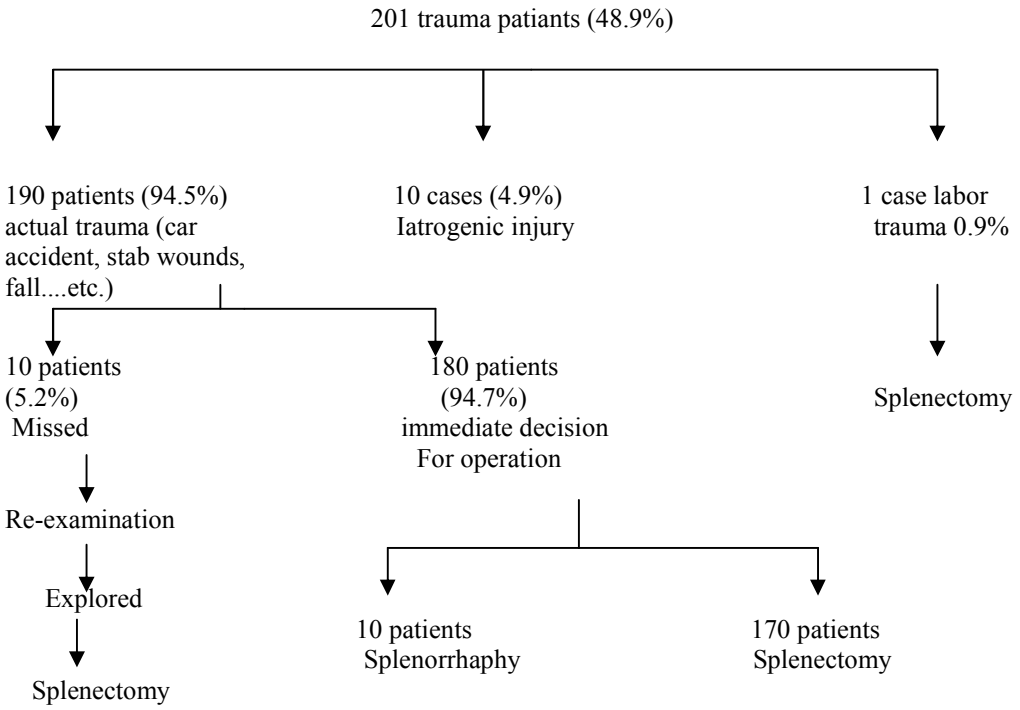
The ages of the patients were in between 4-65 years (mean age 57.4); males predominate on females (250 male to 151 female).

Investigations for hematological cases were done in medical side & splenectomy was performed on their advice.

RESULTS:

The study included 411 patients, their ages ranged between 4-65 years with mean age 57.5, there were 260 males (63%) & 151 females (37%).

Out of 411 patients, 201 cases were due to trauma as follows:



180 patients (43.7%) were splenectomised for blood diseases, all diagnosed by physicians & operated upon on their decision.
6 patients (1.4%) splenectomised for hydatid cyst.
2 patients (0.4%) splenectomised for infectious diseases (malaria).
1 patient (0.2%) splenectomised for abscess.
1 patient (0.2%) splenectomised for torsion of the splenic pedicle.

COMPLICATIONS

It occurred in 36 cases as follow:

- Atelectasis in 20 patients (2.4%).
- Wound infection in 10 patients (1.2%).
- Bleeding in 2 patients (0.4%).
- OPSI in 2 patients (0.4%).(overwhelming post splenectomy infection)
- Acute gastric dilatation in 2 patients (0.4%).
- Haematemesis (0%).
- Gastric fistula (0%).
- Pancreatic fistula (0%).

DISCUSSION:

While non operative management has been effectively practiced in developed countries, it is virtually absent in our region for the following reasons:

1. Lack of suitable image.
2. No real monitoring requirement.
3. Lack of high level nursing care.
4. Lack of rapid mobilization of operating room.

Out of 411 cases, 190 cases were explored due to trauma (46.2%), in a form of car accidents, stab wounds & fall from height. All these 190 cases explored depending on clinical examination, ultrasound report & peritoneal tapping.
All patients were resuscitated & transfused blood which has minimized post operative complications, which are the same findings in other study [2].(Solomonv 2000)
Although CT scan may guide management decision [3], but it was not done in our series since it is not available at casuality hospital.
Ultrasound examination was done & was sensitive in almost 90% of cases, though there are studies showing low levels of sensitivity [4, 5 & 6].
Reliance on free imtraperitoneal fluid may be not accurate because not all of them have free imtraperitoneal fluid.
Out of 190 patients, 180 patients explored immediately after resuscitation & 10 patients kept on conservative treatment & explored after 24 hours (mis diagnosis).
So out of these 190 cases, 180 patients (94.7%) were splenectomised & only in 10 patients (5.2%)

splenorrhaphy were performed, while this was done in other study in 12% [8].(Clancy 1997)

Although non-operative management was not practiced in our region, there were studies that practiced it only in 5% of cases [9] in the form of artery embolisation [10 &11] & they showed no age contraindications for non-operative management [12], but there are studies showing failure rate of 17% - 40% [13, 14, 15 & 16].

So it seems that appropriate selection is the most single important point in the decision [17].

In our series, 10 patients were missed (5.2%), while in other studies it is 2% [18]. the reasons for missing were:

1. Radiological misinterpretation.
2. Incomplete exploration.
3. Surgical inexperience.
4. Severe peritoneal adhesions.

Most of these cases occurred in our early life in surgery (1990-1995) due to lack of experience & unavoidable circumstances in our region. We & others [18] concluded that careful history, complete diagnostic procedures & good exploration are important factors.

IATROGENIC INJURIES:

Out of 201 patients with trauma, 10 cases (4.9%) were due to iatrogenic injuries {any injury which is unintentional damage caused by the surgeon or the assistant during operation}, all were splenectomised. It is a recognized complication, but usually underestimated.

The risk of injury was higher with previous operations, in obese patients, excessive traction & injudicious use of retractors & this injury increased operative time & blood loss as in other series [18].

As mentioned above, the rate in our series is 4.9%, while iatrogenic injuries in other series are between 9% - 40% [20 & 21].

The risk was higher during left hemi colectomy, Five cases (50%), while in other series it is 1.2% - 8% [22 & 23].

Iatrogenic injuries occurred in three cases (30%) during operations on stomach (vagotomy & drainage operation), this is the same finding as others [24].

In our series, we have one case of rupture spleen due to force pressure on the abdomen during labor by nurse. She was 40 years old gravida 8, para 7 & denied any history of malaria. Spontaneous rupture during pregnancy & labor is rare & usually occur during third trimesters [24].

Out of 411 cases splenectomised, 180 patients were for different hematological diseases (43.7%), while in other series was 25.5% [26], so it appears that the indications for splenectomy have changed & hematological diseases are emerging as second common indication.

The mean weights of the excised spleen in our series from hematological causes were 100–106gm, which is almost the same finding with others [26].

It is interesting to mention that we used to do total splenectomy for cases of hematological conditions, not only that we used to search for spleniculi in the peritoneum & remove it to prevent it's enlargement, but Stoehr used to do nearly total splenectomy claiming that total splenectomy is complicated usually by sever infection & thromboembolic events [27].

In our series, we have done 6 splenectomies for hydatid disease of the spleen (1.4%), while in other series it is (2.5%) [13].

Splenic cysts are rare & during the last two decades splenectomy can be done laparoscopically [29]. There are options nowadays to remove the cyst only to prevent complications of splenectomy [30].

In our series we have one case of splenic abscess (0.2%) of unclear aetiology. He was 15 years old male patient & has splenectomised. Splenic abscess are rare & are potentially serious surgical problem with high mortality rate [31].

One case of wondering spleen was found (0.2%) with torsion, while in other series it is 0.5% [7]. She was 18 years old female patient admitted with left loin pain & vomiting. Ultrasound revealed that spleen was not found in it's normal anatomical position, however a well defined homogenous mass of splenic texture with long pedicle was seen in the pelvis. She was explored & torsion of the pedicle found causing infarction of the spleen which was removed.

The presentation of wondering spleen is almost the same in all cases [32], which is a rare entity with only less than 500 cases reported so far [33]. It is usually due to congenital absence of intraperitoneal visceral attachment [34].

COMPLICATIONS :

In our series, comp lications occurred in 36 cases (8.7%) as follows:-

- Atelectasis in 20 patients (2.4%).
- Wound infection in 10 patients (1.2%).
- Bleeding in 2 patients (0.4%).
- OPSI in 2 patients (0.4%).
- Acute gastric dilatation in 2 patients (0.4%).
- Haematemesis (0%).
- Gastric fistula (0%).
- Pancreatic fistula (0%).

• Over all complications was 8.7%, while in other series it is 31% [32].

In our series there is no statistical difference between splenectomised patients & splenorrhaphy, this is the same finding in other series [33].

All patients received blood transfusion with no effect on rate of infection; this is in contrast to other's findings [35].

CONCLUSION:

Splenic operations {splenectomy & splenorrhaphy} are still among the common operations done by general surgeons. Trauma & hematological conditions remain the most two common indications for operation. Gastric & pancreatic fistulas are two historical complications in our series.

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