

Liver Trauma: A Note on its Management and Improvement of Techniques Over the Ages

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Medical science has come a long way in terms of development of procedures and technology which has shaped the treatment scenario across the world. There are many challenges in front of healthcare practitioners when it comes to deal with patients, diseases and injuries they come across. One such injury commonly present is Liver trauma. Liver is one of the vital organs of the body, which helps in detoxification of the blood in the body. Over the ages, the mortality rate due to liver trauma has reduced substantially. With the advent of better emergency services, diagnostic techniques and experienced technicians along with on time availability of diagnostic images, the management of liver trauma has enhanced. The present letter to editor is focused on a review of development in liver trauma management and techniques which in the end have helped in reducing the mortalities associated with it thus saving valuable lives.

Mortality rates due to liver trauma were high almost three decades back. Due to unavailability of better services, i.e. emergency services and diagnostic techniques, it was nearly impossible for surgeons to save the injured patient. Management of liver trauma was big challenge to the medical science during that age.

Over the period of decades to the present age the challenge still exists as even now the mortality rates are not 100 and % reduced, but reduction in the same do have been accomplished. With the enhancement of better emergency services and technologies involved, now severely injured patients could reach the operation table.

Moreover improvement of diagnostic technologies have abled the medical practitioners to view the nearly exact sites of injuries, the bleeding in the parts or organ itself. All these along with sharpening of surgical procedures due to experience knowledge sharing have empowered the medical practitioners, more clearly the surgeons in managing the liver trauma in better way. Liver is highly vital organ of the body, if it gets damaged which is common in the severely accidents, the death is inevitable. However, now the times have changed drastically. ^[1]

Various techniques have evolved in proper management of liver trauma.

Mentioned here are the techniques which have boost the improvement in procedures in saving lives of traumatized livers.

1. CAT Scan

CAT scan has helped in diagnosing the exact state of trauma to the medical practitioners. The imaging procedures via

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CAT scan have helped in proving exact knowledge about the anatomy of the organ, thus, helping in preventing emergency procedures to be conducted to save the life.

2. Diagnostic Peritoneal Lavage

Often known as DPL is highly sensitive diagnostic technique, but the drawback of this technique is it doesn't differentiates the condition in which emergency operation shall be conducted or not.

3. Sonography

It is advantageous in providing immediate diagnostic imaging thus highly applicable in proper management of liver trauma at each stage and progression of improvement after necessary operative procedure.

4. Diagnostic Laparoscopy

It is sensitive upto 18 %, thus not that advantageous. ^[1]

Treating liver trauma depends upon two major factors, a.) Extent of bleeding; b.) Infection danger to liver and other organs.

American Surgeons have graded different levels of liver trauma which is mentioned in Figure 1. ^[2]

Doctors have these days focused upon treating liver trauma cases through a conservative approach. ^[3]

Medical practitioners have given some guidelines when conservative approach of treatment is most preferred, these are:

1. Hemodynamic stability
2. Stable hematocrit
3. Peritonism absent
4. No concomitant injuries requiring laparotomy
5. Better diagnostic techniques are available ^[4]

Liver trauma when accurately diagnosed can be treated through surgical interventions. Most common surgical interventions which can be taken into consideration are:

1. Median laparotomy
2. Diagonal upper-abdominal laparotomy
3. Hepatotomy
4. Hepatostomy
5. Anatomic and non-anatomic resection (Selective)
6. Debridement (Selective)
7. Compression tamponade of the liver (Selective)
8. Intraluminal Cava Shunt (Selective)

Lastly, if above procedures are not being performed, Liver transplant is the last choice which is available of all. ^[1]

Liver is highly vital organ of the body and it's the most common traumatized organ after accidents. The present letter to editor clearly showcases the grades or categories in which liver trauma could be graded and in the end various techniques which we can rely upon to treat the condition properly.

| Liver injury grade | Sub-capsular hematoma | Laceration |
|--------------------|--------------------------|----------------|
| Grade I | <10% surface area | <1 cm in depth |
| Grade II | 10-50% surface area | 1-3 cm |
| Grade III | >50% or >10 cm | >3 cm |
| Grade IV | 25-75% of a hepatic lobe | |
| Grade V | >75% of a hepatic lobe | |
| Grade VI | Hepatic avulsion | |

Figure 1: Liver trauma grades [2]

REFERENCES

1. Anderson R, Alwmark A. Nonprotective treatment of blunt trauma to the liver and spleen. Eastern Association for the Surgery of Trauma, 1-32, 2003.
2. Ozogul B, Kisaoglu A. Non-operative management of blunt hepatic trauma: 80 cases. *Ulus Travma Acil Cerr Derg*, 20(2): 97-100, 2014.
3. Karp M P, Cooney D R, Pros G A. The Non-operative management of pediatric hepatic trauma. *Journal of Pediatric Surgery*, 18:512-518, 1983.
4. Bynoe R P, Bell R M, Miles W S. Complications of nonoperative management of blunt hepatic injuries. *Journal of Trauma*, 32:308-315, 1992.

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