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بالرسالة صفحات
لم ترد بالأصل

Evaluation of splenic preserving surgical procedures in management of traumatic splenic injuries

Thesis

For Fulfillment of Master Degree

In General Surgery

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Introduction

Trauma as a major health problem:

Trauma is the medical term that refers to life-threatening or serious injuries that require specialized surgical care if the patient is to survive without disability. As a "disease," trauma is a major public health problem (Bonnie R et al., 1999).

The 'invisible epidemic' of injury is one of the leading causes of death in working-aged adults and children in almost every country in the world. Injury is a serious threat to public health and to future generations in all countries around the globe, whether high, middle or low-income. In the USA, it is the leading cause of death among people from age 1–45 and the fifth leading cause of death for all age groups. However In low and middle income countries, the problem is particularly acute because of a disproportionately high incidence of injury, a scarcity of resources and prevention efforts, and an extremely low level of funding devoted to this problem in comparison with the high-profile communicable diseases. Of the approximately 5 million deaths annually attributed to injury, 90% occur in low and middle income countries. Childhood trauma has become a major cause of mortality and morbidity, disability and socio-economic burden and it is expected by the World Health Organization (WHO) that by 2020 it will be the number 1 disease globally. Because trauma adversely affects a young population, it results in the loss of more working years than all other causes of death. In 2009 trauma accounted for 2.7 million years of life lost before age 65, with the next closest disease being malignant neoplasms, which was responsible for 1.9 million years of life lost. Regrettably, nearly 40% of all trauma deaths could be avoided by injury prevention measures, and the

establishment of regional trauma systems that would expedite the evaluation and treatment of seriously injured patients (Schuurman N et al.,2010).

Trauma deaths have been classically described as having a trimodal distribution (Fig. 1), with peaks that correspond to the types of intervention that would be most effective in reducing mortality. The first peak, the immediate deaths, represents patients who die of their injuries before reaching the hospital. The injuries accounting for these deaths include major brain or spinal cord trauma and those resulting in rapid exsanguinations. The second peak, the early deaths, is this that occurs within the first few hours after injury. Half are caused by internal hemorrhage and the other half are due to central nervous system injuries. Almost all of these injuries are potentially treatable. However, in most cases, salvage requires prompt and definitive care of the sort available at a trauma center. Development of well-organized trauma systems with rapid transport and protocol-driven care can reduce the mortality in this time period from 30% to less than 10%.The third peak, the late deaths, consists of patients who die days or weeks after injury. Ten percent to 20% of all trauma deaths occur during this period. Mortality for this period has traditionally been attributed to infection and multiple organ failure. (Martin M et al.,2009)

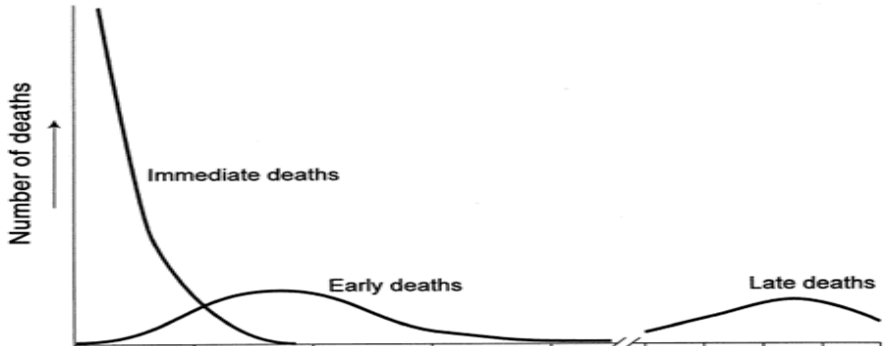

Figure 1: trauma deaths distribution. (Hoyt DB et al., 2007)

The abdomen is the second most common site of injury and The spleen is the intraabdominal organ most frequently injured in blunt trauma; which lies within the early deaths phase of trauma so splenic injury is one of the injuries that are potentially treatable and reduces the mortalities in this phase (Carlos J, 2009).

Countless variables interfere in the survival result of trauma patients. These involve the severity of the trauma event, the victims' clinical conditions and injuries suffered, in addition to the emergency and intra-hospital care models of the received care , meanwhile Mortalities from abdominal trauma are to greater extent avoidable (Marisa A et al.,2010).

Owing to the knowledge that trauma is becoming one of the major health problem in our community with the spleen being one of the frequently affected organs so we will focus in our study on one of the methods in management of splenic trauma which is the operative splenic preserving techniques.

Evolution of splenic preserving techniques:

Since The spleen is the intraabdominal organ most frequently injured by blunt trauma in the United States, and in many institutions splenectomy remains the most common operative procedure performed on the spleen. The history of splenic surgery mirrors the history of surgery for trauma. In the ancient medical literature, the spleen often herniated through a flank wound, partial splenectomy or total splenectomy of the herniated portions was described. The first documented splenectomy for penetrating trauma took place in San Francisco in 1816. It was performed by a British

naval surgeon named O'Brien on a patient whose spleen protruded out of a knife wound (Morgenstern L., 1997).

In the late 19th century, Theodor Billroth observed during an autopsy on a patient who had died of head trauma 5 days earlier that the amount of blood in the peritoneum from the fractured splenic capsule was minimal and predicted that these injuries might be managed non-operatively. Although during the earlier part of the 20th century splenic trauma was uniformly managed by complete splenectomy, Dr. Campos Christo of Brazil reported partial splenectomy and splenic salvage for both penetrating and blunt trauma in 1962 (McClusky D et al., 1999).

Since this initial report, several factors have contributed to a change in the management strategy of splenic trauma mainly the better understanding of splenic function and overwhelming Postsplenectomy sepsis with catastrophic mortality incidence that may exceed 50%, coupled with the relative success rates for splenic salvage techniques, the ability to obtain repeated cross-sectional images using CT. All of these previous factors lead to new guidelines in management of splenic trauma in which lower-grade splenic injuries are managed nonoperatively and operative management is centered around splenic preservation when possible(Dafydd A. et al., 2009).

Accordingly, saving normally functioning splenic parenchyma has become the most important goal in the management of splenic injuries. In some 50% of adults (and over 80% of children), this goal can be achieved by means of nonoperative treatment. In approximately 20% of adults, splenorrhaphy and partial splenectomy are possible; splenectomy is indicated in the remainder. Partial splenectomy is also favored on occasion