SURGICAL DELAY IS A CRITICAL DETERMINANT OF SURVIVAL IN PERFORATED PEPTIC ULCER

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It has long been established that a delay in surgical intervention in patients presenting with perforated peptic ulcer, is associated with a high mortality. This Danish study was the first to correlate this risk directly with an hour by hour delay from admission to surgery. The study included 2668 patients with a median age of 71, and included all Danish patients treated surgically for peptic ulcer disease between February 2003 and August, 2009. This was a nationwide cohort study to evaluate the adjusted effect of hourly surgical delay on survival after peptic ulceration.

Mortality rates in patients presenting with perforated peptic ulceration have been reported as high as 25 -30%, with sepsis as the leading cause of death. The cornerstones of treatment include immediate intravenous antibiotics, and early surgical intervention. The surgery has two purposes, namely, to remediate the source of infection by satisfactorily addressing the perforation of the gastro-intestinal tract and also the thorough peritoneal lavage required to remove the intra-peritoneal sepsis. The age of the patient and the presence of associated comorbidities were additional factors associated with mortality in this clinical presentation.

The results showed that over the first 24 hours after admission, each hour of surgical delay beyond the hospital admission was associated with a median decrease in thirty day survival by 2%.

The strength of this study included its size and the nationwide population based design, and the very extensive and complete follow up available on each patient. The authors outline the factors associated with delayed surgical intervention. Many of these factors relate to individual “system issues” at particular hospitals, inadequate resources, lack of facilities, delayed attendance by Emergency Care staff and delayed referral to a surgeon, and of course, delayed clinical presentation of the patient at the Emergency Department with the perforation obviously having occurred many hours earlier.

There are numerous previous studies that have reported the strong negative prognostic impact of delayed surgery for perforated peptic ulceration. This is the first study available assessing surgical delay as a continuous variable.

The authors correlate the strong association between delay in surgery and adverse outcome, with the increased risk of developing overwhelming intra-abdominal and systemic sepsis.