Wound Infection in Primary versus Delayed Primary Wound Closure in Cases of Perforated and Gangrenous Appendicitis

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Objective: To study the efficacy of delayed primary wound closure in gangrenous and perforated appendicitis.

Design: A prospective randomized study; 80 patients were allocated into two groups of 40 each. In group A the wound was left open for delayed primary closure while in group B the wound was closed primarily. All patients were given one dose of gentamicin and metronidazole, continued for 3 days.

Setting: Surgical Department, Mubarak Al-Kabeer Hospital, Kuwait.

Subjects: Patients found to have gangrenous or perforated appendicitis.

Results: Wound infection was observed in nine patients in group A and in four patients in group B.

Conclusion: Primary wound closure is superior to delayed primary closure although statistically not significant.

Keywords: Appendicitis, Wound infection, Wound closure.

In order to reduce the incidence of post appendectomy wound infection, several methods have been used, such as the use of prophylactic systemic antibiotics, topical antimicrobial agents and delayed primary wound closure. The purpose of this study was to evaluate the use of delayed primary wound closure in preventing wound infection in cases of gangrenous and perforated appendicitis.

Material and Methods

In the period September 1987 through August 1989 all patients diagnosed clinically as having acute appendicitis were given one dose of gentamicin and metronidazole; only patients found to have gangrenous or perforated appendicitis were included in the study.

Swab cultures were obtained from the peritoneal fluid or pus, appendectomy was performed, the operation field was irrigated with isotonic saline solution, then the peritoneum and muscles closed with absorbable sutures. Before closing the wound, patients were allocated either to group A (delayed primary wound closure) or group B (primary wound closure).

In group A the skin and subcutaneous layers were left open after placing untightened prolene sutures in the skin and the wound was loosely packed with a piece of gauze beneath the dressing. In group B the wound was closed as in A; in addition the skin sutures were tightened. In both groups the same antibiotics were

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