A Safer Technique of Closure of Peptic Ulcer Perforation

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Abstract There are several variations in the technique of closure of peptic ulcer perforation. The technique of closure of perforation by figure of 8 was found to be very effective in dealing with this common problem

Keywords Figure of 8 stitch

Introduction

Peptic ulcer perforation through anteriorly situated ulcer in the first part of the duodenum is a common problem in this part of the country (Southern Rajasthan). It may be attributed to the excessive intake of chillies. Although peptic ulcer perforation seems to be a trivial problem to deal with, it leads to high morbidity and mortality if reperforation occurs. This article is written after a long experience of 20 years in this field, to deal with such cases more effectively, especially when the patient comes late, that is, after two, three or more days, when the edges of the ulcer and the wall of the duodenum are very friable.

Technique and Observation

The author has been dealing with the cases of peptic ulcer perforation (first part of the duodenum) for more than 20 years, on an average of four cases per month. During this long experience, it was found that sometimes the edges

of the ulcer were very friable and oedematous. In these cases, when the stitches were applied they cut through the edges. In such cases, a new option was tried, that is, the suture was applied a bit away from the edge and a figure-of-8 was made as follows: the needle was passed into the duodenum at some distance away from the ulcer (Figs. 1, 2, 3, point A), taken out through the ulcer and then again passed through the ulcer into the duodenum and taken out through all layers of the walls of the duodenum on the distal side (point B). Now, these were not tied but the needle was taken to the proximal side of the ulcer (point C) and passed into the duodenum and taken out through the ulcer and again passed into the duodenum through the ulcer and taken out distally through the duodenal wall (point D). Now, the suture was tied to make it a figure-of-8. This technique was used in all cases and was found to be very effective. In case of a big ulcer, if required, additional one or more supporting simple stitches were applied on one or both the sides of the figure-of-8 suture, depending on the size of the ulcer. This additional stitch or stitches did not tend to cut through because the edges of the ulcer were already approximated by the figure-of-8 suture. The closed ulcer was covered by live omentum and sutures were applied to the stomach and the duodenum wall to fix the omentum to cover the ulcer area. The suture material used was atraumatic silk. All the patients but one of the studied cases recovered without any reperforation. One patient expired on the fourth postoperative day because of the respiratory problem which was unrelated to ulcer repair.

The following advantages were found with this technique:

1. The suture can be taken from a relatively longer distance by even a small needle.
2. There is lesser tendency to cut through because the pressure at one point is divided into two directions, and

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Fig. 1 First step of closure of peptic ulcer perforation

- the pressure is exerted on four points instead of two points. When a simple stitch is applied, there are more chances of cut through the friable and oedematous walls because pressure is directed towards one point.
3. The edges of the ulcer do not tend to evert by the effect of the figure-of-8 stitch and approximation of edges has been found to be satisfactory.
  4. The cross of the figure-of-8 comes over and supports the most friable and oedematous central part of the ulcer.

All the patients were kept on drug treatment for 1 to 4 months following operation and no definitive surgery was done later. In the follow-up of these cases, all the patients were found well and no further surgery was required. The author did not find this technique described in literature.

Fig. 2 Second step of closure of perforation to make figure-of-8

Fig. 3 Closure of peptic perforation by figure-of-8 suture completed

Discussion

One of the methods of closure of peptic ulcer perforation is by plugging the defect with a convenient frond of omentum and absorbable stitches applied over it [1]. Another method is simple closure, that is, using 3–0 or 4–0 gauge absorbable sutures to close the perforated duodenal ulcer [2]. However, they [2] have mentioned that when induration is so marked that sutures tend to cut out, the perforation can be closed with omentum alone. However, the author by his experience has found that the technique to apply figure-of-8 suture and covering it with omentum is better than either of the techniques described above for these cases. In the opinion of the author, this technique should be the standard technique of closure of peptic ulcer perforation.

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