Endoscopic Polypectomy in the Proximal Colon

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Summary

Until recently a laparotomy was necessary to carry out polypectomy for diagnostic, prophylactic or therapeutic purposes.

With the aid of a diathermy wire loop (or snare) developed by us, and a flexible coloscope, we have succeeded in removing 6 colonic polyps through the anus.

The operation is completely painless and is carried out without anaesthesia or the previous administration of analgesics. The patient is saved the operation of laparotomy with the attendant period of hospitalisation.

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On account of their tendency to become malignant with increasing size, polyps in the colon having a diameter of more than 1 cm, must be removed by operation (2). In sections of the colon that are accessible to the rectoscope, pedunculated, and also sessile polyps whose bases are not too wide, are removed with the aid of the diathermy loop. In the case of polyps in the proximal sections of the colon which were previously inaccessible to the endoscope, excision was formed after laparotomy and colotomy. With the newly-developed coloscopes it is possible today to examine endoscopically the entire colon up to the caecum. In about 80% of the cases examined we succeeded in reaching the ileocolic valve (1).

When the upper section became accessible to the endoscope, it was natural to want to remove polyps with a suitable instrument passed through the coloscope in this section, too.

With the aid of a diathermy snare, developed by us, the first colon polyps were successfully removed without having to open the patient's abdomen.

Instruments

For polypectomy we have developed a 2.5 m long, fully-flexible probe bearing a diathermy snare at the tip, which is inserted through the instrument channel of the more than 2 m long coloscope.

The snare consists of a thin steel wire and is connected to an insulated handle by means of a flexible wire. The snare and the wire are incorporated in an insulated Bowden cable. By pushing forward the handle, the diathermy snare emerges from the end of the Bowden cable and opens to a diameter of more than 3 cm.

For the removal of the polyps we use a high-frequency A.C. voltage of 1 MHz and having a power rating of between 40 and 80 watts. The neutral electrode is applied to one of the thighs (Figs. 1, 2).

Polypectomy

In particular the pedunculated polyps are suitable for removal in the way described. When the coloscope is being introduced, \( \text{CO}_2 \) is insufflated into the intestine to prevent the heat developed during the removal of the polyps from causing the explosion of a
methane–oxygen mixture in the colon. When the polyp has been determined endoscopically, the insulated system is pushed through the instrument channel and, under direct visual control, the snare advanced and passed round the stalk of the polyp (Fig. 3). The snare is pulled tight and the polyp drawn somewhat into the lumen of the intestine. The snare is then further tightened, the high-frequency voltage applied and the polyp removed. The end of the polyp stump is coagulated during the procedure and thus haemorrhaging prevented. Excised polyps are removed from the colon with the aid of a flexible forceps inserted through the instrument channel of the coloscope (Figs. 4 and 5).

Since the mucosa of the intestine is not provided with any somatic component of the nervous system, the operation is completely painless and can therefore be carried out without anesthesia or administration of analgesics.
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Results

Up until the present time, we have removed 6 polyps having diameters of up to 1.5 cm – one in the descending colon, three in the upper colon and two in the lower sigmoid colon.

Complications have been observed neither during nor after the operation. Until we have gained more experience, we consider a period of hospitalisation of 5 days after the operation to be necessary.

Discussion

On account of their potential malignancy, colonic polyps having a diameter of more than 1 cm should be removed for reasons of prophylaxis, and subjected to a histological examination.

In the case of pedunculated adenomas which histologically prove to be benign, or which evidence non-invasive cancer cells in the body of the polyp, their removal at the base is adequate. Turrel and Haller have observed no recurrence after 5 years follow-up (3).

If, on the other hand, localised nests of cancer cells showing invasive growth are found, an immediate radical surgical operation is indicated.

Previously, prophylactic and therapeutic removal of proximal colonic polyps required the performance of laparotomy and colotomy.

With the aid of the diathermy loop developed by us it is now possible, using a flexible coloscope, to remove such polyps through the anus while leaving the abdomen closed. The operation of polypectomy is painless, so that no anesthesia is necessary.

The patient is spared both a laparotomy and a lengthy stay in hospital.

References