
Functional Outcome after IRA, Caecorectal Anastomosis and IPAA in Patients with FAP

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The aim of the study was to compare a functional outcome after three different types of surgical procedures in patients with familial adenomatous polyposis (FAP): subtotal colectomy with ileorectal anastomosis (IRA), subtotal colectomy with caecorectal anastomosis (CRA), and ileal pouch anal anastomosis (IPAA).

Materials and methods. We evaluated the bowel function in 20 patients (10 men and 10 women) after different types of colectomy. Three different groups included 9 patients after IRA, 2 patients after CRA and 9 patients after IPAA. CRA has been performed modifying the length of the large bowel remnant to be of the same length as the rectum after standard IRA. The upper third of the rectum has been removed, stapling the caecum just above the Bauhini valve, and leaving approximately 8 cm of the rectum and 7 cm of the caecum. The age at colectomy was on average 29 years (range, 14–48 years) in IRA group, 23 (21 and 25) in CRA group, and 27 (range, 17–47 years) in IPAA group. Three patients in IRA group and 3 patients in IPAA group were operated on in the presence of colorectal cancer. Both CRA patients were operated on for FAP alone.

Results. All patients filled the questionnaire or had been interviewed. In IRA group, time after surgery has been on average 6.5 years (range, 1–20 years), in CRA group 2 and 3.5 years, and in IPAA group on average 23 months (6–42 months). One (11.1%) patient in IRA group and one (11.1%) patient in IPAA group had to change their work after operation. Dietary restrictions were present in 2 (22.2%) patients after IRA and 4 (44.4%) patients after IPAA.

Conclusion. Functional results after IRA and IPAA are comparable. CRA allows to achieve a better bowel function after colectomy for FAP and could be considered as an alternative to IRA.

Key words: familial adenomatous polyposis, subtotal colectomy, ileorectal anastomosis, caecorectal anastomosis, ileal pouch anal anastomosis, functional outcome

INTRODUCTION

A number of medications have been demonstrated to have an effect on colorectal adenomas in familial adenomatous polyposis (FAP): ascorbic acid has shown to have a temporary effect on the reduction of adenoma growth (1); the non-steroid antiinflammatory drug sulindac (Clinoril) has been demonstrated to act on colorectal polyps as well (2, 3); at the moment, the European trial is still conducted to evaluate a possible effect of resistant starch and/or aspirin on FAP patients with intact colons (4). The effect of COX-2 inhibitors in FAP is currently investigated. None of these options does have a distinct clinical significance, as none of them could, for

example, help us to delay surgical treatment. Surgical treatment remains the only reliable option in preventing colorectal cancer in FAP. Two main strategies of surgical treatment are spread worldwide today: subtotal colectomy with ileorectal anastomosis (IRA) and reconstructive proctocolectomy with ileal pouch anal anastomosis after endoanal mucosectomy (IPAA). IRA is a single-stage operation, preserves the normal defecation route, has a low complication rate, ensures an acceptable bowel function, but a lifelong postoperative rectal control (rectoscopy with polypectomies and fulguration of rectal polyps) is necessary (with 3–6 month intervals) and rectal cancer risk remains. However, with adequate postoperative follow-up after IRA, the risk of rectal

Table. Functional outcome after IRA, CRA and IPAA in patients with FAP

Type of surgery (No. of cases)	Average number of stools in 24 h	Leakage during the day	Leakage during the night	Urgency*	Antidiarrheal medicine
IRA (9)	4	0	0	3	2
CRA (2)	1	0	0	0	0
IPAA (9)	6	1	1	4	4

• Urgency – inability to defer evacuation for more than 30 minutes.

cancer is acceptably low (13% after 25 years), and even after developing rectal cancer, prognosis is likely to be good (5). IPAA is a two-staged procedure (preventive ileostomy is usually preferred), has a significantly higher complication rate, but eliminates the need of frequent follow-up and risk of rectal cancer, preserves the normal defecation route and ensures an acceptable bowel function. It is necessary to note that a recent comparison of functional results after IRA and IPAA showed no distinct difference (6–8); it is specially illustrative in the group of those FAP patients who had conversion of IRA to IPAA: 90% of patients claimed their functional results to be unchanged after conversion (9)!

The possibility of a functionally superior type of subtotal colectomy is based on the functional significance of the ileocaecal valve: first, it prevents regurgitation of the material from the caecum into small bowel, and second, it delays passage of the ileal contents into the colon, thus allowing more time for absorption in the small bowel (10).

The aim of the study was to compare the functional outcome after three different types of surgical procedures in patients with FAP: IRA, subtotal colectomy with caecorectal anastomosis (CRA) and IPAA.

MATERIALS AND METHODS

We evaluated the bowel function in 20 patients (10 men and 10 women) after different types of colectomy. Three different groups included 9 patients after IRA, 2 patients after CRA and 9 patients after IPAA.

Subtotal colectomy and IRA has been performed in a standard fashion, preserving superior rectal artery and suturing the small bowel end-to-end to the rectum at the level of the promotorium, thus leaving on average 15 cm of the rectum.

Subtotal colectomy and CRA has been performed modifying the length of the large bowel remnant to be of the same length as the rectum after standard IRA. The upper third of the rectum has

been removed, stapling the caecum just above the Bauhini valve, thus leaving approximately 8 cm of the rectum and 7 cm of the caecum.

Restorative proctocolectomy with IPAA has been performed using the J-shaped ileal pouch, on average 15 cm long, with stapled ileal pouch anal anastomosis in 7 patients and handsewn anastomosis after rectal stump eversion mucosectomy in 2 patients.

The age at colectomy was on average 29 years (range, 14–48 years) in IRA group 23 (21 and 25) in CRA group, and 27 (range, 17–47) years in IPAA group. Three patients in IRA group and 3 patients in IPAA group were operated on in the presence of colorectal cancer. Both CRA patients were operated on for FAP alone.

RESULTS

All patients filled the questionnaire or have been interviewed. In IRA group, time after surgery has been on average 6.5 years (range, 1–20 years), in CRA group 2 and 3.5 years, and in IPAA group on average 23 months (6–42 months). One (11.1%) patient in IRA group and 1 (11.1%) patient in IPAA group had to change their work after operation. Dietary restrictions were present in 2 (22.2%) patients after IRA and 4 (44.4%) patients after IPAA. The functional outcome is listed in Table.

DISCUSSION

Preservation of caecum rather than rectum is logical due to the very important features of the FAP itself: both the number and size of polyps increase in the distal parts of the colon and rectum compared to proximal and colorectal cancer is most likely to develop in the distal colon and rectum, and rarely in the right side of the colon (11). Finally, preservation of a similar length of the segment as after IRA (15 cm), consisting of the lower part of rectum and caecum, and preserving the ileocaecal junction result in a function superior to IRA, and likely does not increase the

risk of colorectal cancer during the follow up, if adequate principles are applied.

The pioneer idea of subtotal colectomy and CRA belongs to Lillehey and Wagensteen (12). Later Rosi and Cahill (13) reported on 15 successful subtotal colectomies with caecorectostomy for the treatment of patients with multiple polyps, leaving all the rectum and caecum (25 cm segment) – so the left large bowel segment was postoperatively easily reachable with a standard rigid proctoscope for postoperative control. Flexible endoscopy offered new possibilities in the treatment and control of large bowel polyps, thus eliminating subtotal colectomy in such situations. The successful use of reconstructive proctocolectomy in treatment of FAP patients regarding bowel function and the acceptable percentage of postoperative complications and its superiority in cancer prevention (8) leave but very little space for subtotal colectomy. It is obvious that subtotal colectomy could only be planned for patients with a lower number of polyps and is not suitable in “carpeted” colorectal adenomatosis. It might be an attractive idea in the treatment of patients with attenuated familial adenomatous polyposis, where the number of polyps is low and the onset of colorectal cancer is late. Despite the privileges caecorectostomy has over IRA, there might be one disadvantage: during the life-long surveillance – rectal control of polyps after IRA is as a rule safe, as polyps are removed from the rectal wall lying extraperitoneally, thus eliminating the risk of free perforation. After caecorectostomy, removal of polyps from the bottom of caecum might carry this risk to a certain amount, which has to be borne in mind while removing and fulgurating polyps from the caecum.

CONCLUSION

The functional results after IRA and IPAA are comparable. CRA allows to achieve a better bowel function after colectomy for FAP, and could be considered as an alternative to IRA.

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FUNKCINIAI REZULTATAI PO KOLEKTOMIJŲ DĖL ŠEIMINĖS ADENOMINĖS POLIPOZĖS SU ILEOREKTOSTOMIJA, CEKOREKTOSTOMIJA IR KLUBINĖS ŽARNOS REZERVUARO JUNGTIMI SU ANALINIŲ KANALU

S a n t r a u k a

Šio darbo tikslas buvo palyginti funkcinis rezultatus po trijų tipų kolektomijų dėl šeiminės adenominės polipozės (ŠAP): subtotalinės kolektomijos su ileorektostomija (IRA), subtotalinės kolektomijos su cekorektostomija (CRA) ir rekonstrukcinės proktokolektomijos su klubinės žarnos rezervuaro jungtimi su analiniu kanalu (IPAA).

Medžiaga ir metodai. Įvertinome 20 ligonių, 10 vyrų ir 10 moterų funkcinis rezultatus po minėtų trijų tipų operacijų. Šias grupes sudarė 9 ligoniai po IRA, 2 po CRA ir 9 po IPAA. CRA buvo atliekama modifikuojant storosios žarnos likusio segmento ilgį, kad jis būtų toks pat, kaip po standartinės IRA. Viršutinis tiesiosios žarnos trečdalis buvo

pašalinamas, akloji žarna susiuvama su likusia tiesiosios žarnos dalimi šalia valvula Bauhini, paliekant apie 8 centimetrus tiesiosios žarnos ir apie 7 centimetrus aklosios. Ligonų amžius operacijos metu buvo vidutiniškai 29 metai (14–48) IRA grupėje, 23 (21 ir 25) CRA grupėje ir 27 (17–47) IPAA grupėje. 3 ligoniai iš IRA grupės ir 3 iš IPAA grupės jau sirgo storosios žarnos vėžiu. Abu ligoniai, kuriems atlikta CRA, operuoti profilaktiškai.

Rezultatai. Visi ligoniai užpildė klausimyną arba buvo apklausti telefonu. Laikas po operacijos IRA grupėje buvo vidutiniškai 6,5 metai (1–20 metų), po CRA – 2 ir 3,5 metų, IPAA grupėje – 23 (6–42) mėnesiai. 1 (11,1%) ligo-

nis po IRA ir 1 (11,1%) ligonis po IPAA po operacijos turėjo keisti darbą. Dietos laikytis turi 2 (22,2%) ligoniai po IRA ir 4 (44,4%) ligoniai po IPAA. Lyginant šias grupes pagal tuštinimosi skaičių per parą, išmatų laikymą, tuštinimosi neatidėliotinumą bei vaistų nuo viduriavimo vartojimą, pranašiausi rezultatai yra po CRA.

Išvada. Sergančiųjų ŠAP funkciniai rezultatai po IRA ir IPAA yra panašūs; po CRA funkciniai rezultatai geresni, todėl ši operacija galėtų būti alternatyva IRA.

Raktažodžiai: šeiminė adenominė polipozė, subtotalinė kolektomija, ileorektostomija, cekorektostomija, klubinės žarnos analinė jungtis, funkciniai rezultatai