A Retrospective Study of Colonic Polyps in King Chulalongkorn Memorial Hospital

Naruemon Wisedopas MD*,
Duangpen Thirabanjasak MD*, Mana Taweevisit MD*

* *Department of Pathology, Faculty of Medicine, Chulalongkorn University*

To evaluate and classify polyps from colon in Thai patients, the authors retrospectively analyzed the 776 polyps from 696 subjects in King Chulalongkorn Memorial Hospital during the past five-year period from 1999 to 2003. All colonic polyps were included in the study. There were 461 (59%) male and 315 (41%) female with the mean age of 51 years. Non-neoplastic and neoplastic polyps were documented 50% each. Hyperplastic polyp was the most frequent diagnosis (39%), followed by tubular adenoma (36%). According to neoplastic polyp, 8%, 3%, and 14% cases were identified as high-grade dysplastic change, intramucosal carcinoma, and invasive carcinoma, respectively.

Keywords: *Colonic polyp, Thai patient*

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Colonic polyps, defined by protrusive growth of colonic mucosa into the lumen, are the common medical problem. Some of them carry considerable risk of malignant transformation. The prevalence is high with increasing age[1,2]. Although colonic polyps may be incidentally found and do not contribute any symptom, but sometime they occur as a part of inherited syndromes and cause life-threatening episodes such as colonic obstruction and hematochezia[3]. Thus, removal of the suspected lesions is required for making histopathological diagnosis and giving appropriate management. We also retrospectively collected and analyzed the prevalence of colonic polyps in Thai population.

Material and Method

All histologically proven colonic polyps in the pathological reports were retrieved from the surgical pathology file at the King Chulalongkorn Memorial Hospital between the years 1999 and 2003. Hematoxylin and eosin stained (H&E) sections were performed routinely in each case. According to histologically specified, these polyps were classified as non-neoplastic and neoplastic polyps. The non-neoplastic polyps were subdivided into hyperplastic, inflammatory, juvenile, and Peutz-Jeghers polyps. Neoplastic polyps were also subdivided into adenoma, adenoma with high grade dysplasia, intramucosal carcinoma arising in adenomatous polyp (intramucosal carcinoma), and carcinomatous change from adenoma with invasion (invasive carcinoma), whereas histomorphology was categolized as tubular, villous, and tubulo-villous adenoma. The data of age and sex was obtained from the pathology reports as well as location, either rectosigmoid or others,which was both endoscopically and surgically removed. Additional information, including presenting symptoms, underlying medical diseases, and family history was also noted when available.

Seven hundred and seventy-six polyps from 696 subjects were entered. Of these, thus, 75 individuals possess at least two colonic polyps. The subjects had a median age of 51 years and consisted of 461 men and 315 women.

Results

From 1999 to 2003, 776 polyps were both endoscopically and surgically removed from 696 subjects, who had a median age of 51 years, consisting of 461 men (59%) and 315 women (41%). Three

Correspondence to : Taweevisit M, Department of Pathology, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand. Phone: 0-2256-4235, Fax: 0-2652-4208, E-mail: dr_mana4@hotmail.com

hundred and sixty-eight polyps (47%) were found in rectosigmoid region and the remaining 408 polyps (52%) were located proximal to sigmoid colon.

A total of 776 polyps were histologically stratified as 393 non-neoplastic polyps (50%) and 383 neoplastic or adenomatous polyps (50%). Non-neoplastic polyps were subclassified into hyperplastic (39%) (Fig. 1) with 178 (59%) male and 125 (41%) female, inflammatory (8%), juvenile (2%) (Fig. 2), and Peutz-Jeghers polyps (1%), in order of frequency. The neoplastic polyps were phenotypically divided as tubular (36%) (Fig. 3) with 177 (64%) male and 98 (36%) female, villous (2%) (Fig. 4), and tubulo-villous adenomas (1%). Ninty-five or one fourth of neoplastic polyps in our report were associated with neoplastic transformation, microscopically recognized as high-grade dysplasia (8%), intramucosal carcinoma (14%), and invasive carcinoma (3%) (Fig. 5), respectively.

As the name implied, juvenile polyps were most commonly appeared in the youngest of the mean age (16 years). Conversely, the oldest mean aged group was observed in adenomatous polyps, principally tubulo-villous adenomas (64 years).

Discussion

In our study, the incidence of colonic non-neoplastic and neoplastic polyps was 50% each.

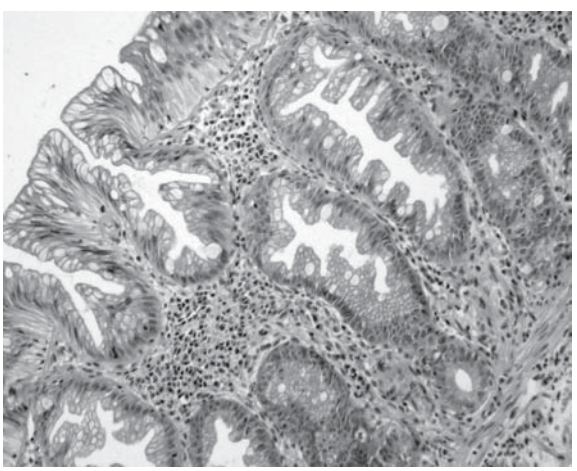

Fig. 1 Hyperplastic polyp- Hyperplastic change of colonic epithelium, arranging in serrated appearance (H&E stain, X400)

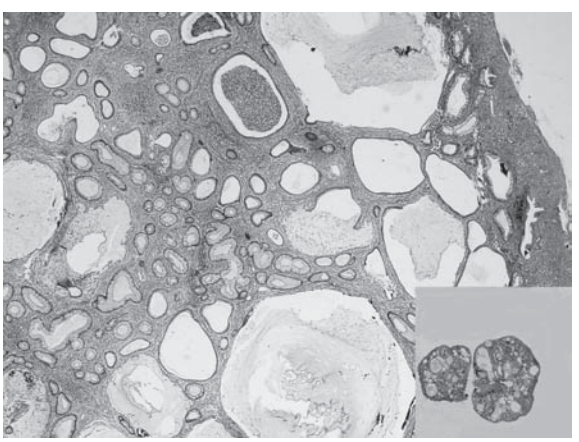

Fig. 2 Juvenile or retention poly- Dilated colonic glands containing inflammatory cells (H&E stain, X200). In set (right lower corner), the whole specimen reveals a polypoid mass with smooth surface

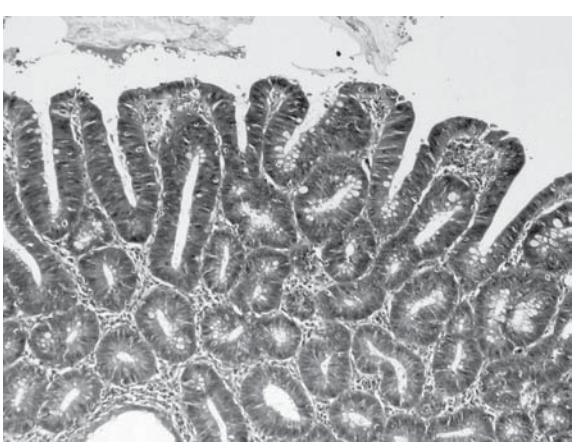

Fig. 3 Villous adenoma- Finger-like feature of colonic mucosa with low-grade dysplastic change of colonic epithelium (H&E stain, X200)

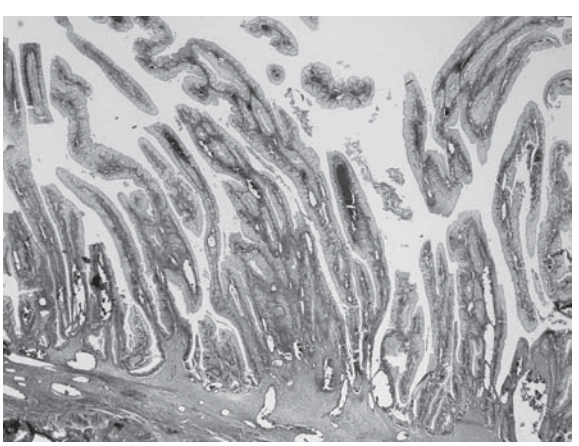

Fig. 4 Tubular denoma- Low-grade dysplastic colonic epithelium, which arranges in long and short tubular patterns (H&E stain, X200)

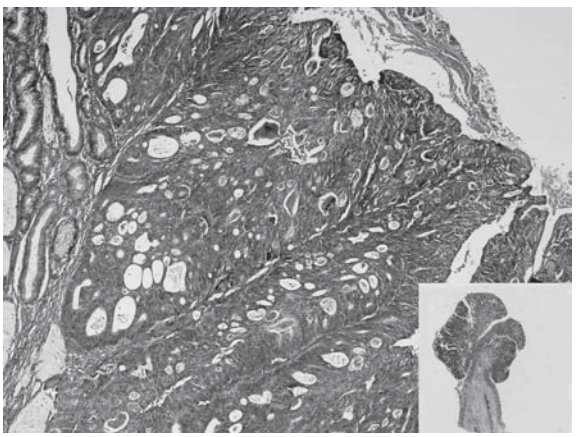

Fig. 5 Carcinomatous change- Malignant transformation arising from adenomatous polyp, recognized as disorderly complex glandular configuration (H&E stain, X200). In set (left lower corner), the whole specimen shows a polypoid mass with distinct stalk

Hyperplasic polyps were the most common, accounting for 39%, whereas the next most common was tubular adenomas, accounting for 36%. In fact, however, the comparison of prevalence among geographic areas is difficult and the accuracy is low owning to different methods used for detection. Therefore, the prevalence of polyps around the world tends to be increase with age[1-3].

Nowadays, several authors hypothesize that hyperplastic polyps may be precursors of colorectal carcinoma[4]. This evidence is explained by DNA methylation and deficient DNA mismatch repair and supported by recent case reports[5-7]. In addition, cancer risk or dysplastic change in subjects with a history of hyperplastic polyposis is higher than that of normal population[8,9]. Thus, it may be harmful to neglect the individual diagnosed as hyperplastic polyp. In our report, dysplastic feature was not documented in all hyperplastic polyps. Concerning to the location, rectosigmoid colon is the most frequent site, account for 51% compared to other regions, resembling previous literatures[10].

Juvenile polyps were quite common in pediatric age group as similar to this report, even they occur in any age and may give the another term as retention polyps[11]. Many recent present studies describe that every polyp in the less than 20 years old patient is not always a juvenile polyp. In another circumstance, juvenile polyps themselves can be morphologically change to adenoma and adenocarcinoma[12]. Moreover, this condition is more necessary in patient with juvenile polyposis coli (JPC), which is characterized by at least 10 juvenile polyps or any juvenile polyp in a relative for and index case of JPC. Bowel resection at the age of around 20 years is the proper treatment[13]. Additionally, rectal bleeding together with anemia is the most frequent presenting symptom in some patients as seen in 10 out of 17 cases of juvenile polyps or 59% in our series[14]. Atypical change and history associated with JPC, however, were not seen in all these subjects.

Although inflammatory polyps, accounting for 8% in this report, were look like juvenile polyps at first glance, but the lamina propria of these polyps harbor dense inflammatory cell infiltration along with reactive epithelial atypia[15].Today, they are still recognized into non-neoplastic polyp[16]. Peutz-Jeghers (PJ) polyps, which were classified as hamartoma, comprise 1% in this present study. They were histologically recognized by complex branching of stromal connective tissue and well developed smooth muscle bundles, dividing colonic glands into lobular architecture. Malignant potential of PJ is still questionable, but the important point is relation between PJ polyp and PJ syndrome[17]. The incidence of either gastrointestinal or non-gastrointestinal cancer is significantly increased in PJ syndrome. Eight out of 10 PJ polyps or 80% in our report were associated with PJ syndrome[18].

Considered to neoplastic polyps, adenoma-carcinoma sequence is very important and pathologists must looking for this feature carefully. Rex DK et al report that the community general pathologists in USA have weak points including no comment about cancer differentiation and misleading high-grade dysplasia to low-grade in 31% and invasive carcinoma in 22%[19]. Interestingly, many studies show that more than 1 cm of adenomatous polyps and any size of polyps with villous component are two significant factors, establishing malignant transformation[20,21]. Moreover, removal technique can be interfere appropriate diagnosis. Absar MS et al summarize that incisional biopsy is inadequate to rule out malignancy. Biopsy yielded 18.5% of false negative result, compared to polyp examination from totally excised specimen[22]. In our series, 25% of adenomatous polyps revealed evidence of malignant change among which invasive carcinomatous progression was most often noted, accounting for 14%.

In conclusion, the prevalence of colonic polyps is different among the countries, according to procedure that use to detection. However, pathologists must be concern about the malignant transformation

Table 1. Distribution of mean age and sex

Classification	Meanage(years)	Male	Female	Total (%)
Non-neoplastic polyps				
Hyperplastic polyp	58	178	125	303 (39)
Inflammatory polyp	60	27	36	63 (8)
Juvenile polyp	16	10	7	17 (2)
Peutz-Jeghers polyp	36	7	3	10 (1)
Neoplastic polyps				
Tubular	62	177	98	275 (36)
Villous	61	12	4	16 (2)
Tubulo-villous	64	50	42	92 (12)
Total	51	461	315	776 (100)

Table 2. Distribution of locations, in which polyps were removed

Classification	Rectosigmoidregion	Others	Total (%)
Non-neoplastic polyps			
Hyperplastic polyp	155	148	303 (39)
Inflammatory polyp	24	39	63 (8)
Juvenile polyp	9	8	17 (2)
Peutz-Jeghers polyp	0	10	10 (1)
Neoplastic polyps			
Tubular	116	159	275 (36)
Villous	8	8	16 (2)
Tubulo-villous	56	36	92 (12)
Total	368	408	776 (100)

Table 3. Histologically proven adenoma-carcinoma sequence

Neoplastic polyps	No malignant change	High-grade dysplasia	Intramucosal carcinoma	Invasive carcinoma	Total (%)
Tubular	229	12	5	29	275 (72)
Villous	13	0	0	3	16 (4)
Tubulo-villous	46	18	5	23	92 (24)
Total (%)	288 (75)	30 (8)	10 (3)	55 (14)	383 (100)

and communicate atypical differentiation of these polyps to physicians. Ultimately, close follow-up is highly recommended in suspected cases for reducing cancer risk.

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การศึกษาแบบย้อนหลังของก้อนติ่งเนื้อในลำไส้ใหญ่ในโรงพยาบาลจุฬาลงกรณ์

นฤมล วิเศษโอภาส, ดวงเพ็ญ ถิระบัญชาศักดิ์, มานะ ทวีวิศิษฏ์

เพื่อต้องการทราบข้อมูลพื้นฐานทางคลินิกและพยาธิวิทยาของก้อนติ่งเนื้อในลำไส้ใหญ่ จึงทำการศึกษาย้อนหลังจากใบรายงานผลทางพยาธิวิทยาของผู้ป่วยทั้งหมด ตั้งแต่ พ.ศ. 2542 ถึง พ.ศ. 2546 รวม 5 ปี เป็นก้อนติ่งเนื้อในลำไส้ใหญ่จำนวน 776 ก้อน จากผู้ป่วยทั้งหมดจำนวน 696 ราย จากการศึกษาพบว่าเป็นก้อนติ่งเนื้อ จากชาย 461 ก้อน (59%) ก้อนติ่งเนื้อจากหญิง 315 (41%) โดยมีอายุเฉลี่ย 51 ปี ผลการศึกษาพบว่าอุบัติการณ์ ของก้อนติ่งเนื้อในลำไส้ใหญ่ประเภทเนื้องอกและไม่ใช่เนื้องอกมีอย่างละ 50% ก้อนติ่งเนื้อแบบไฮเปอร์พลาสติก พบได้บ่อยที่สุด คิดเป็น 39% ส่วนรองลงมาคือ อดีโนมาที่มีลักษณะเป็นท่อ คิดเป็น 36% สำหรับก้อนติ่งเนื้อ ประเภทเนื้องอก สามารถตรวจพบการเปลี่ยนแปลงระยะก่อนมะเร็ง ลักษณะมะเร็งภายในเยื่อบุ และมะเร็งที่ลุกลาม ภายในก้อนติ่งเนื้อได้ 8%, 3% และ 14% ตามลำดับ