

# High-Grade Dysplasia in Giant Tubular Adenoma

## Yüksek Derece Displazili Dev Tubüler Adenom

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### Abstract

Rectal adenomas with a high risk of cancer frequently occur in anal bleeding and mucus discharge. The risk of malignancy is greater than 50% in polyps larger than 2 cm and includes areas of dysplasia, and the likelihood of dysplasia is correlated with the excess of the villous component ratio, the proximity of the polyp to the anal region, and the increase in size. Large, lumen-encircling polyps are difficult to treat with endoscopic or transanal intervention and necessitate surgical intervention. In this article, we present a female patient who had rectal mucus discharge and had a lower anterior resection and coloanal anastomosis after developing a tubular adenoma with high-grade dysplasia and no villous component.

**Keywords** Adenomatous polyps, biopsy, colonoscopy, colectomy

### Özet

Malignite riski yüksek olan rektal adenomlar sıklıkla anal kanama ve mukus akıntısıyla görülür. Displazi alanları içeren 2 cm'den büyük poliplerde malignite riski %50'den fazladır ve displazi olasılığı villöz komponent oranının fazlalığı, polipin anal bölgeye yakınlığı ve polip boyutunun artışı ile displazi olasılığı korele seyredir. Büyük, lümeni çevreleyen poliplerin endoskopik veya transanal girişimle tedavisi zordur ve cerrahi müdahale gerektirir. Bu yazıda; rektal mukus akıntısı ile başvuran tetkiklerinde yüksek dereceli displazili ve villöz komponent içermeyen tübüler adenomu olan kadın hastamızı, alt anterior rezeksiyon ve koloanal anastomoz yaparak tedavi ettiğimiz olguyu sunuyoruz.

### Anahtar Kelimeler

Adenomatöz polipler, biyopsi, kolonoskopi, kolektomi

## INTRODUCTION

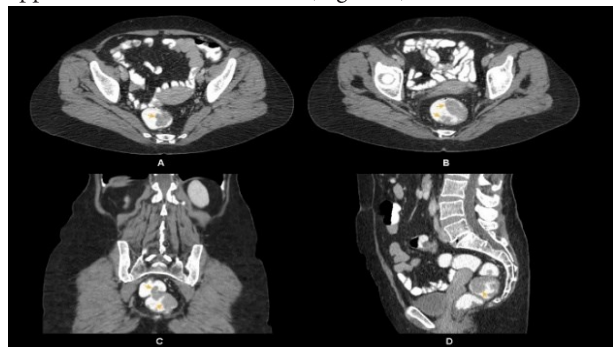
The prevalence Polyps are growths that protrude from the mucosa of the colon into the lumen and are frequently asymptomatic. They may bleed when they get ulcerated on the outside, have tenesmus if they are in the rectum, or become blocked if they become significantly larger. Two-thirds adenomas with neoplastic potential comprise about 2/3 of all polyps, depending on whether they are histologically categorized as neoplastic or non-neoplastic. The presence of one adenoma indicates the presence of a 30-50% synchronous second adenoma<sup>1</sup>. Independent of histological characteristics and size, age is a risk factor for the development of dysplasia<sup>2</sup>. Colon adenoma prevalence is 25-30% in the fifth decade, reaching 50% by the age of 70<sup>3</sup>, increasing the chance of having a high body mass index<sup>4</sup>. The average growth rate of polyps is 0.5 mm per year, and only 5% of minor polyps progress to cancer within 7-10 years<sup>5</sup>. High-grade dysplasia, an increase in size, and the villous component ratio are all risk factors for the development of cancer. At the time of diagnosis, 3-5% of adenomas had invasive malignancy, and 5-7% had high-grade dysplasia<sup>6</sup>. The majority of adenomas are less than 1 cm in diameter and can be sessile, flat, pedicled, or depressed based on their endoscopic appearance. Hardness, ulceration, and fragility are signs of malignancy. Based on histological characteristics, it is categorized as tubular, villous, or tubulovillous. Tubular adenomas, which comprise 80% of all adenomatous polyps, are defined as having at least 75% of the polyp in tubular components. High-grade dysplasia is characterized by atypical cellular regions that are confined to the crypt epithelium and do not invade the lamina propria. The lamina propria does not promote metastasis because it lacks a lymphatic network. Invasive carcinoma is seen in tubular adenomas larger than 2 cm in 35% of cases<sup>7</sup>. Polypectomy should be used to remove all polyps. In cases where the polyp size is 2 mm or less, endoscopic mucosal resection procedures should be tried. In contrast, in cases where the size is greater, it should be treated with polypectomy with a snare and electrocautery (cold polypectomy)<sup>8</sup>. Endoscopic treatment of an adenoma with high-grade dysplasia with clean resection margins is sufficient and does not require additional intervention. Adenomas with villous components should undergo surgery if they cover a large portion of the colon wall, cannot be removed endoscopically, contain high-grade dysplastic regions, and have villous components.

In this article, the findings of a case with high-grade dysplasia, no villous component, and a tubular adenoma are presented.

## CASE REPORT

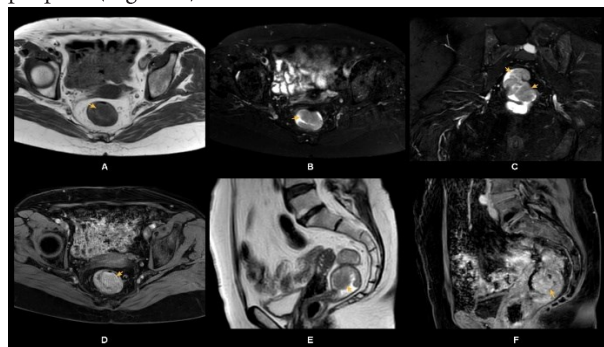
Our Informed consent was obtained from the patient for this case report.

A 59-year-old female patient was admitted to the outpatient clinic with complaints of involuntary defecation, sporadically bleeding from the anal region, and feeling unable to completely clean over the previous three months. The body mass index (BMI) was 36 kg/m<sup>2</sup>. A rectal examination revealed a palpable lump in the ampulla recti. Computed tomography showed a mass lesion in the rectum that measured 17 mm at its thickest point and had an approximate 11 cm diameter (Figure 1).



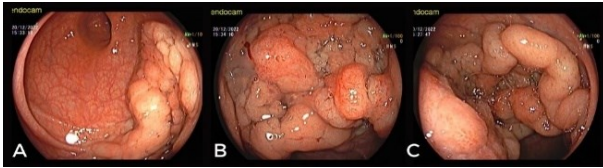
**Figure 1.** Intravenous and rectal contrast-enhanced Axial (A, B), sagittal (C), and coronal (D) computed tomography images demonstrate a polypoid mass lesion (arrows) originating from the posterior wall of the rectum, extending from the proximal anal canal to the rectum lumen, and generating an intraluminal filling defect

No infiltration of diseased lymph nodes and nearby visceral organs was found in the mesorectal planes of the phased sequential magnetic resonance imaging carried out for this purpose (Figure 2).



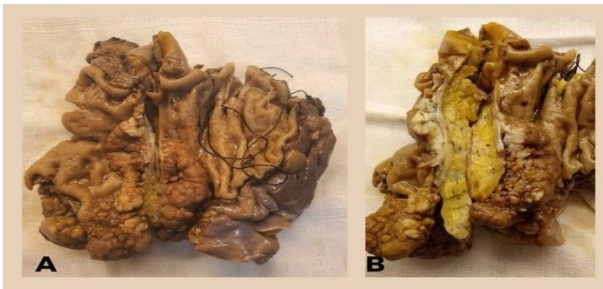
**Figure 2.** Pelvic magnetic resonance imaging shows a polypoid mass lesion (arrows) that is hypointense on T1 weighted images (WI) (A), isohypointense on axial (B) and coronal (C) T2 fat-saturated images, isohypointense on T2-WI (E), and minimal heterogeneous enhancement on post-contrast series (D, F). The lesion originates from the posterior wall of the rectum, extends from the proximal anal canal to the rectal lumen, and causes the intraluminal filling defect.

Colonoscopic examination indicated a mass lesion that began approximately 4 cm from the anal entrance and progressed up to 15 cm, encircling the lumen but not obstructing it (Figure 3).



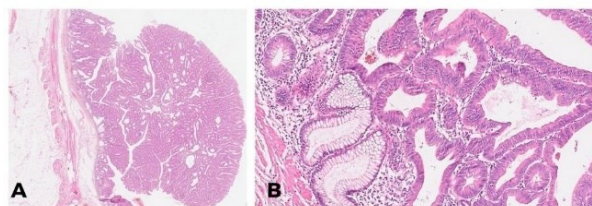
**Figure 3.** Colonoscopy revealed a giant lobular polyp (A-C) that surrounds the lumen and does not produce obstruction in the lumen, beginning from the 4th cm to the 15th cm from the entrance of the anal canal.

Biopsy samples revealed a high degree of dysplasia. The interdisciplinary oncology council made the decision to treat the patient surgically, which included an ultra-low anterior resection, coloanal anastomosis, and diverting ileostomy. The surgical margins were found to be tumor-free by frozen inspection (Figure 4).



**Figure 4.** Evaluation of the lower anterior resection piece for a frozen examination.

The ileostomy was closed four weeks after the surgery. Based on pathological analysis, the tumor was a 12x8 cm tubular adenoma with high-grade dysplastic regions (Figure 5). The radial surgical margin was found to be 4 cm, the proximal surgical margin to be 6 cm, and the distal surgical margin to be 2 cm. The nine lymph nodes inspected were found to be clear of tumoral lesions, indicating that the mesorectal excision was finished. The patient had no extra care, and outpatient control was advised.



**Figure 5.** Microscopic examination (A) Hematoxylin and Eosin x4, tubular adenoma; (B) Hematoxylin and Eosin x100, dysplasia of the tubular epithelium.

## DISCUSSION

Colorectal cancers develop from epithelial cells that line the mucosa of the colon. The mucosal stem cells at the base of the crypt structures give rise to the short-lived colon lining epithelial cells, which frequently undergo apoptosis on the mucosal surface to end their lives. These cells come into close contact with substances that are harmful and can cause cancer, such as substances found in food, bacteria, and the compounds those organisms make. The rate of epithelial cell renewal is accelerated by both these variables and a few hereditary genetic factors. Rapidly proliferating cells can convert into dysplastic and neoplastic cells as a result of maturation deficits, and adenomas can develop during this process. In the early stage, "dysplastic" changes, also known as neoplastic changes, might be observed in a single crypt. These malignant cells primarily grow on the basement membrane's surface, where they produce adenomatous polyps that spread into the intestinal lumen. In the advanced stage, dysplastic cells that produce adenomatous polyps override the basement membrane and enter the "lamina propria" regions, the tissue that supports the mucosa, leading to the development of colorectal cancer. The "two-stroke theory" explains how adenoma-carcinoma develops. Therefore, multiple variables occur at different times to produce alterations in the mucosa and the development of cancer. Adenomatous polyps can sometimes indicate advanced growth when this change does not take place. Giant polyps are those that are larger than 3 cm and are removed using endoscopic mucosal excision methods<sup>9,10</sup>. As in the present case, polyps larger than 10 cm are uncommon, and the available research on the best way to treat them is scant. The malignant degeneration of adenomatous polyps depends on the type and diameter of the polyp. Villous polyps have an eight times greater likelihood of developing cancer than tubular adenomas. Similar to this, although adenomatous polyps less than 1 cm have a malignancy rate of less than 5%, those larger than 2 cm have a malignancy incidence of 50%<sup>11</sup>.

Bains et al. presented a review of the literature on large rectal polyps and their histological findings<sup>12</sup>. The average polyp diameter in the patients reviewed was 13.2 cm, and all were villous adenomas. The polyp found in our case is a 14 cm diameter tubular adenoma without a villous component and with high degree dysplasia in some locations.

The majority of adenomatous polyps are asymptomatic and are found during screening or follow-up colonoscopies. Complete excision and biopsy are both possible during a



colonoscopy, in addition to the ability to observe polyps of all sizes. The most effective course of action is polypectomy because most polyps are elevated from the mucosa. The effectiveness of this treatment can occasionally be hampered by the size, location, and difficulty of reaching the polyp. The removal of large colon polyps during endoscopy raises a number of concerns, including the risk of the procedure and the possibility of inadequate polypectomy. The latter is particularly concerning since large polyps have an increased risk of harboring invasive carcinoma. Endoscopic resection of large polyps, especially laterally spreading sessile polyps, is also more time-consuming and requires more resources compared with polypectomy of smaller lesions. Because of these issues, surgical resection is often performed, particularly for large sessile polyps and for those in locations that are difficult to manage endoscopically. However, some large polyps can be successfully removed with endoscopic methods, provided that an endoscopist who is experienced in large polyp removal is available. Thus, some patients can avoid surgery. Large, medium, and distant rectal polyps can be operated on with transanal endoscopic microsurgery. In the literature, the mean polyp diameter for this procedure has been reported as 5.2 cm<sup>13</sup>. Due to the possibility of stricture development, per-anal endoscopic resection is not advised in polyps larger than 6 cm in which circumferential full involvement is seen and the villous component is predominant. Carditello et al. found 10% of invasive cancer in rectal polyps larger than 3 cm after local or broad excision, with recurrence occurring in 23% of patients during a six-year follow-up<sup>14</sup>. Giant rectal adenomatous polyps with a predominately villous component have a 50% accuracy rate for biopsies. Furthermore, invasive carcinoma is found in 1 in 8 polyp excision specimens where malignancy is not expected. These facts make surgical intervention the preferred course of action in such situations. It can be done laparoscopically or openly, with a 0.3% mortality rate and a 1.4% chance of an anastomotic leak<sup>15</sup>. Although there was no villous component in the present case, it was an instructional example and contributed to the literature because a tubular adenoma with a high degree of dysplasia was found and remained asymptomatic for a long time despite its advanced size. Because it was positioned up to the level of the proximal rectum, there was no need for anal intervention, and aggressive surgical intervention was undertaken. The fact that a whole mesorectal ultra-low anterior resection was done and no invasive malignancy was found as a consequence of the pathology is thought-provoking.

#### **Ethical Declarations**

Not applicable, because this article does not contain any studies with human or animal subjects. An informed consent was obtained from the patient for this case report.

#### **Conflict of Interest Statement:**

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, shareholding and similar situations in any firm.

#### **Financial Disclosure:**

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

#### **Author Contribution**

Surgical and Medical Practices: S.A. Ç.K., Concept: Ç.K., Design: S.A., Data Collection or Processing: S.A. Ç.K., Analysis or Interpretation: S.A. Ç.K., Literature Search: Ç.K., Writing: S.A.

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