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Case report

## COLORECTAL ADENOMAS: A CASE SERIES OF 5 CASES

Aisha Tabassum<sup>1</sup>, \*Mohammad Shahid Iqbal<sup>1</sup>, Veeragandham Satyanarayana<sup>2</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor & Head, Department of Pathology, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda, Andhra Pradesh, India

\*Corresponding author email: drshahidkbn@yahoo.com

### ABSTRACT

Adenomatous colorectal polyps are known to be precursor lesions for colorectal cancer. Colorectal adenomas are usually classified into two categories: tubular and villous. A mixed (tubulovillous) phenotype is also recognized. The aim of the study was to study the prevalence and pathological features of adenomatous polyps. We studied five cases of adenomas. Three were diagnosed as tubular adenomas and two were diagnosed as villous adenomas. Most of the significant polyps were identified in patients aged 50 years or older. In case of villous adenoma, the incidence of dysplasia rose with an increase in size. Conclusion: It is advisable that all polypoidal lesions should be removed for definitive histological examination.

**Key words:** Adenoma, Polyp, Colorectal cancer

### INTRODUCTION

The adenoma is a circumscribed, benign epithelial neoplasm with potential for malignant change<sup>1</sup>. The prevalence of large intestinal adenomas varies in different parts of the world. Adenomas are common in westernized cultures and uncommon in developing countries<sup>2</sup>. Many studies have linked age, gender, smoking, family history, and other factors, with risk of adenoma occurrence<sup>3</sup>. The incidence of adenomas parallels the incidence of colorectal cancer, and countries with high rates of colorectal cancer also have high rates of colorectal adenoma<sup>4</sup>. The frequency of adenomas increases with age, so that there is a 50% incidence in patients who are 60 – 80 years of age. They are commonly found in the

ascending colon, transverse colon, sigmoid colon and rectum<sup>5</sup>. Adenomas may be categorized as conventional, flat or serrated. Depending on their predominant growth pattern conventional adenomas are the most common<sup>5</sup>. Adenomas are uncommon before the age of 40 years. Autopsy surveys have also shown that adenomas are relatively evenly distributed along the length of the large intestine. However, adenomas are more likely to occur in the ascending colon with increasing age<sup>1</sup>.

Grossly, adenomas assume one of the three major growth patterns.

(a) Pedunculated (b) Sessile, or (c) flat or depressed

Adenomatous polyps are segregated into three subtypes on the basis of the epithelial architecture :

1. Tubular adenomas : tubular glands
2. Villous adenomas : villous projections
3. Tubulovillous adenoma : a mixture of the above <sup>6</sup> .

**CASE REPORT**

Here we report a case series of five cases of colorectal adenomas diagnosed in our institute. Three cases were diagnosed as tubular adenomas

and two cases were diagnosed as villous adenomas<sup>4</sup>. Cases were received as a biopsy specimen while 1 was a resected specimen. Age of the patient ranged from 25 years to 68 years with a mean age of 47 years. Of the 2 villous adenomas, one was pedunculated measuring 4.5 x 2.5 cm with a stalk of 1 cm, and the other was sessile measuring < 0.5 cm. Two tubular adenomas were pedunculated and one was sessile. The size of the tubular adenoma ranged from <0.5 cm to 1.5 cm.

**Table.1: Details of cases**

Case No.	Age (Years)	Sex	Site	Size (cm)	Type
1	68	M	Rectum	1.5	Tubular adenoma
2	25	M	Rectum	< 0.5	Tubular adenoma
3	28	M	Rectum	2.5 x 1	Tubular adenoma
4	59	M	Rectum	4.5 x 2.5	Villous adenoma
5	50	M	Rectum	< 0.5	Villous adenoma



**Fig.1: Tubular adenoma showing dysplastic epithelium (40X)**



**Fig.2: Villous adenoma showing dysplastic epithelium (60X)**

Histologically tubular adenomas showed tubular architecture with back to back gland arrangement having stratification of lining epithelium with hyperchromatic nuclei, mitosis and mucin depletion. The nuclei are crowded, elongated and stratified. All the three tubular adenomas were of low grade (Fig.1). The villous adenomas showed elongated finger like non branching fronds and dysplastic epithelium showing stratification of the lining epithelium with hyperchromatic nuclei and mitoses. Considerable architectural abnormality present in the form of crowding and

back to back gland arrangement was present. Nucleoli were prominent in the larger villous adenoma.(Fig.2)

**DISCUSSION**

Tubular adenomas are more frequently pedunculated lesions. They represent the majority of adenomatous polyps, accounting for nearly two-thirds of lesions identified. Histologically, these lesions have a predominantly tubular configuration with glands embedded in the lamina propria and infolding of

tubules. While the percentage of specific tubular versus villous elements required to define adenoma type is subject to individual definition, it is generally accepted that tubular adenomas must contain greater than 75% tubular features to meet criteria<sup>7</sup>. Villous adenomas are the least common type of adenomatous polyp, comprising only 5% to 10% of all adenomas. They are more often sessile than other polyps and commonly appear multilobated and friable with a “cauliflower-like” appearance. Histologically, epithelial fronds that may be single or branched are characteristic. Relative to other adenomatous polyp, villous lesions have the most pronounced association with carcinoma. Importantly sampling error with endoscopic biopsy may occur, particularly with larger lesions, and all villous adenomas should be removed completely because of the high rate of associated cancer<sup>7</sup>. Distinction of villous structures from elongated separated tubules is sometimes problematical. Villous architecture is defined arbitrarily by the length of the glands exceeding twice the thickness of the normal colorectal mucosa<sup>8</sup>. Tubulovillous adenomas are characterized by a combination of both tubular and villous elements. These lesions occur less frequently than tubular adenomas<sup>7</sup>. Microscopically, there is an increase in the number of glands and cells per unit area compared to the normal mucosa. The cells are crowded, contain enlarged hyperchromatic nuclei, and have an increased number of mitoses, some of which may be atypical. Focal areas of villous configuration are not infrequent in adenomatous polyps<sup>9</sup>. The degree of atypia seen in adenomatous polyps is related to increasing age, number of polyps per patient, size of the polyps and presence of villous changes. It can be graded into mild, moderate and severe; the latter is equivalent to carcinoma in situ<sup>9</sup>. Sometimes, clusters of atypical glands in an adenomatous or villoglandular polyp are seen beneath the muscularis mucosae and may lead to a mistaken diagnosis of malignant transformation<sup>10,11</sup>.

Our study showed a male preponderance. In the national polyp study, adenoma occurred more frequently in men than women, with 61.6% cases in men and 38.4% cases in women<sup>11</sup>. In our study, three cases were seen in individuals above 50 years of age and two cases were seen in individuals < 40 years of age. William et al has reported 45% of the cases in the age range of 51-65 years<sup>12</sup>. An adenoma less than 1 cm has a 0.2 % chance of being malignant, adenoma 1.0 – 2.0cm has a 4.2 % chance and an adenoma > 2.0 cm, a 27% chance<sup>12</sup>. Morphological features that determine the malignant potential of an adenoma are size, growth pattern and grade of dysplasia. The majority of colorectal adenomas are small, with roughly 95% less than 2cm in greatest diameter. However, there is a correlation between the degree of villous component and polyp size at diagnosis. Adenomas smaller than 5 mm confer almost no risk of harboring cancer, while increasing size and villous component have positive linear relationships with invasive capacity<sup>7</sup>. The classification of adenomas into those with a predominantly tubular pattern, those with a mainly villous pattern and those with a mixture of tubular and villous areas (tubulovillous adenoma) has shown that in general, the adenoma with a villous pattern has a higher malignant potential than one with a tubular pattern. The reported risk factors for recurrence include multiple adenomas, a large adenoma, severe dysplasia, a tubulovillous / villous adenoma, and an adenoma in the proximal colon<sup>13</sup>. To conclude, adenomas are usually asymptomatic. Larger adenomas may bleed and this may be tested by occult blood testing. Most adenomas show mild dysplasia and least common are severe dysplasia. Demonstration across the line of muscularis mucosae is a precondition for diagnosis of invasive carcinoma. Innocent displacement (pseudoinvasion) through the muscularis mucosa to the submucosa must be distinguished. It is advisable that all polypoidal lesions should be removed for definitive histological examination.

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