

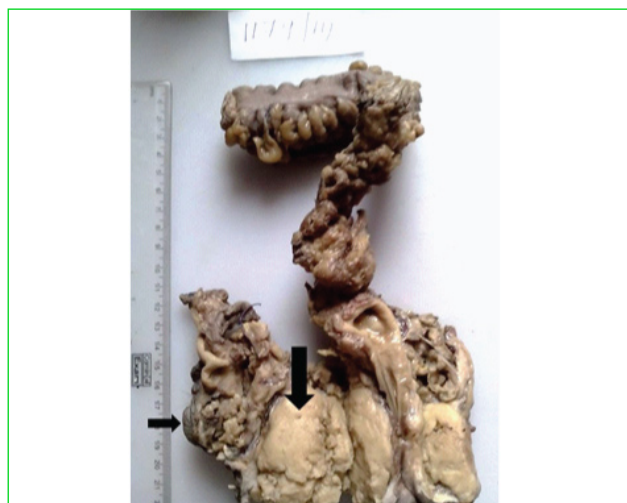
# Gastrointestinal Stromal Tumor of the Anal Canal

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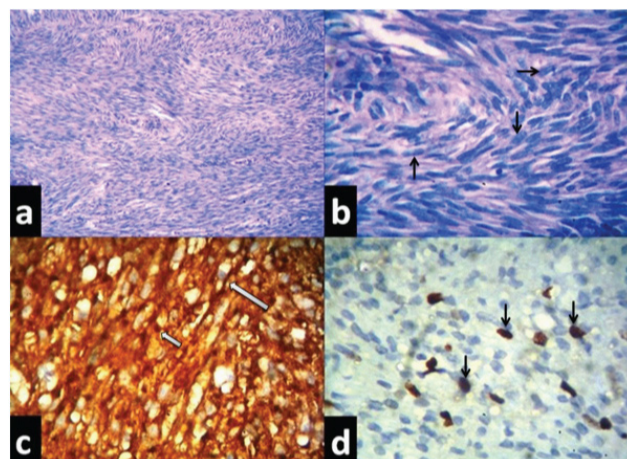
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A 69 year old male presented with history of constipation for 1 month duration. Per rectal examination of the patient revealed an anal growth which was bleeding on touch and circumferentially involving anal canal. Perianal region showed a firm nodular lesion measuring 1.5 cm in diameter. Computerised tomography showed two lesions one around anal canal in the intersphincteric space and another in the subcutaneous plane in the perianal region. No lymphnodes were enlarged. Core biopsy from the anal growth showed a spindle cell lesion suggestive of gastrointestinal stromal tumor (GIST). Abdomino-perineal resection was done. Gross specimen showed a nodular greyish white homogenous lesion with focal haemorrhagic areas measuring 6x5 cm circumferentially involving anal canal. A separate nodule in the perianal region measuring 1.5x1 cm was also noted [Table/Fig-1]. No lymphnodes were identified. Microscopically both the lesions showed spindle cells arranged in interlacing bundles and fascicles with focal palisading and areas of necrosis [Table/Fig-2a,2b]. Mitotic count was 9/50 high power fields. Diagnosis was confirmed with immunohistochemical examination which showed C-Kit [CD117]-95% strong membranous and cytoplasmic positivity [Table/Fig-2c], Ki-67 - 10% positive [Table/Fig-2d], negative for desmin and S-100. Surgical margins were uninvolved by the tumor. Histopathological impression was GIST with high risk for malignancy. The follow up of patient is uneventful till date.

The differential diagnosis for GIST includes leiomyoma, leiomyosarcoma, schwannoma, malignant peripheral nerve sheath tumor, solitary fibrous tumor, inflammatory myofibroblastic tumor, fibromatosis and sarcomatoid carcinoma. Histopathological and immunohistochemical evaluation helps in the diagnosis of GIST. Gastrointestinal stromal tumor (GIST) constitute 0.1 – 3% of all gastrointestinal malignancies. The occurrence of GIST at various sites are stomach (50-60%), small intestine (30-40%), colon (7%) and oesophagus (1%). GIST of anal canal and rectum are often grouped together and account for < 5%. Anal GIST constitute only 2-8% of anorectal GIST [1]. GIST are derived from interstitial cells of cajal and show C-Kit mutation. GIST express C-Kit (95%), CD34 (70%), smooth muscle actin (40%), S100 and desmin (2%) [2]. In 5% cases GIST occurs due to PDGFRA (platelet derived growth factor receptor alpha) gene mutations [3].



**[Table/Fig-1]:** Gross specimen showed a nodular greyish white homogenous lesion with focal haemorrhagic areas measuring 6x5cm circumferentially involving anal canal. (Thick arrow) A separate nodule in the perianal region measuring 1.5x1 cm also noted (Thin arrow)



**[Table/Fig-2]:** (a) Show spindle cells arranged in interlacing bundles and fascicles (H&E, 10x), (b) Show uniform spindle cells with elongated blunt-ended nuclei (arrow) with eosinophilic cytoplasm (H&E, 40x), (c) Immunohistochemistry for C-Kit showed strong membranous (long arrow) and cytoplasmic positivity with golgi pattern (short arrow) (40x), (d) Immunohistochemistry for Ki-67 showed nuclear positivity (arrow) in 10% of cells (40x)

Anorectal GIST show male predominance and occurs in the fifth to seventh decades of life. Clinically patients presents with rectal bleeding, pain, change in bowel habits, obstruction and urinary symptoms due to prostatitis. The diagnostic interventions are ultrasonogram, computed tomography (CT) and magnetic resonance imaging (MRI). Investigations that may be useful in staging includes 18FDG-PET (18 fluoro-deoxyglucose-positron emission tomography) and CT. Usual finding in imaging is lesion in the intersphincteric space [2].

Microscopically GIST are composed of spindle cells (70%), epithelioid (20%) and mixed (10%). The National Institutes of Health (NIH) consensus criteria for predicting malignant potential of GIST are based on size (> 5 cm), mitotic activity (> 5/50 high power fields). GIST rarely metastasize to the regional lymphnodes. But it can spread to liver, lungs and bones in case of inadequate surgical clearance [2].

Kumar M et al., [1] in their case study presented a 60 years male with complaints of altered bowel habits, rectal bleeding and found to have a lesion in the anal canal measuring < 2 cm. In another case report by Carvalho et al., [2], a 73 years old male presented with anal mass measuring 7x3.5x3 cm. In

the study by Nigri GR et al., [3], a 78 year old male was found to have a mass in anal canal measuring 4x2 cm accidentally discovered during routine physical examination. All the above cases showed C-Kit positivity and none showed lymphnodes involvement or distant metastasis as in our case. But our case presented with constipation, bleeding on touch and found to have one nodule measuring 6x5cm around anal canal and another separate nodule measuring 1.5x1 cm in the perianal region. This has not been reported in the literature and further studies are needed to know the significance of such presentation.

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