

## Rectal Adenocarcinoma in an 9 Year Old Girl: A Case Report

Hedayatollah Nahvi<sup>1</sup>  
Behdad Gharib<sup>1</sup>  
Somayeh Jafrasteh<sup>1</sup>

Sara Memarian<sup>1</sup>  
Mohammad Rozeh Eshagh<sup>1</sup>  
Zeinab Najafi<sup>1</sup>

Mohammadtaghi Majnoon<sup>1</sup>  
Mojtaba Gorji<sup>1</sup>  
Rahman Khosravi<sup>1\*</sup>

<sup>1</sup>Department of Pediatrics, Tehran University of Medical Sciences, Tehran, Iran

\*Address for Corresponder: Dr. RahmanKhosravi, Department of Pediatrics, Tehran University of Medical Sciences, Tehran, Iran  
(email: khosravirahman@yahoo.com)

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### Abstract

Rectal adenocarcinoma is rare in children. The patient described here is a 9-year-old girl who presented with rectorrhagia. Her problem started 3 months ago and she had been treated for infectious diarrhea. A colonoscopy was performed 3 months after the onset of symptoms and a non-pedunculated polyp in the rectum was noted and resected. After the colonoscopy signs and symptoms of peritonitis developed and in laparotomy a rectal perforation was noted and a biopsy from rectal mucosa was taken. The result of biopsy was adenocarcinoma. Then a low anterior resection of rectum with protective ileostomy followed by adjuvant chemotherapy was performed. During a 15 month follow-up the patient had no problems and no clinical, radiological or laboratory signs or symptoms of recurrence was found. However rectal adenocarcinoma is rare but it should be considered in the differential diagnosis of intestinal problems.

### Keywords

- Rectal adenocarcinoma
- Adenocarcinoma of colon
- colorectal cancer in children
- Nonpedunculated polyp

### Introduction

Colorectal carcinoma in the pediatric population is very uncommon, the incidence being only 1.3 per million.<sup>1</sup>

It comprises 2% of malignancies in teenagers and has been reported in patients as young as 9 months of age.<sup>2</sup> The likelihood of a cancer should be considered for any child with signs and symptoms of gastrointestinal bleeding.<sup>3</sup>

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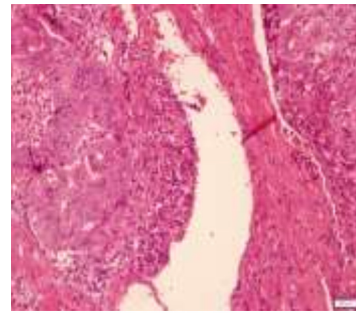
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## Case presentation

A 9-year-old girl was referred to our hospital and admitted in the gastrointestinal ward with rectorrhagia. The problem started 3 months ago with blood stained stool which gradually aggravated. She had received treatment for infectious diarrhea several times without any improvement.

On general examination she weighed 20 kilogram (under the 3<sup>rd</sup> percentile of weight for age) and looked pale. Her abdomen was soft with mild generalized tenderness. The rest of the exam and vital signs were unremarkable. Her family history was notable for colon cancer in her grandfather. She underwent a colonoscopy where a non-pedunculated polyp was found, located 10 centimeter from the anal verge. The polyp was resected endoscopically. A few hours later, the patient developed abdominal distension, abdominal pain and signs and symptoms of peritonitis. The abdominal plain radiography revealed free air in the abdominal cavity. The surgical team decided to do an emergency laparotomy. During the surgery rectal perforation was detected, Hartman pouch and a colostomy and rectal biopsy were carried out.

In 2 weeks, the examination of the biopsy specimen revealed "moderately differentiated rectal adenocarcinoma" **Figure 1**. By having the report the surgeons decided to perform a low anterior resection of rectum with protective ileostomy followed by chemotherapy. The ileostomy was closed 5 weeks afterwards. In the 15 months follow-ups the patient was alright without any signs or symptoms of tumoral recurrence clinically, radiologically or in the lab work-ups.



**Figure 1:** The section shows neoplastic tissue containing cells with round to oval nuclei and occasional nucleoli with moderate to severe pleomorphism that partially arrange in villoglandular structure. Scattered mitotic activity and infiltration of mixed inflammatory cells are seen. The diagnosis is moderately differentiated adenocarcinoma.

## Discussion

The peak age of colorectal cancer in children is 15 years old and the youngest reported case of colorectal cancer has been a 9-month-old girl.<sup>6</sup> In pediatrics, boys are afflicted more than girls by colorectal cancer.<sup>7</sup>

About 2 % of pediatric neoplasms are primary gastrointestinal (GI) malignancies. The most prevalent cancer of GI in pediatrics is colon adenocarcinoma. The involvement of rectum in children is much lower than adult colon adenocarcinoma.<sup>5</sup> Although rectal adenocarcinoma in children is a rare disease, but the incidence of rectal cancer in under 40 year olds is increasing.<sup>4</sup> Colorectal carcinoma is very rare in children with the incidence of less than 2 cases in one million children. Colorectal adenocarcinoma in children have 2 major categories: Hereditary nonpolyposis and Polyposis related colorectal carcinoma.<sup>8</sup>

Ten percent of children with bowel cancer have predisposing factors such as polyposis syndromes, familial multiple cancers syndromes and ulcerative colitis.<sup>5</sup> Inflammatory bowel disease is an important risk factor of colorectal cancer.<sup>7</sup>


The common symptoms of children with colorectal carcinoma are vomiting and abdominal pain. Other presentations are rectorrhagia, constipation, weight loss, change of bowel habits and anemia.<sup>5</sup> As the presentations of colorectal cancer are nonspecific, the diagnosis is usually delayed thus the prognosis is very poor.<sup>6</sup> Rectal bleeding without pain is the most common presentation of large bowel polyps and other symptoms are abdominal pain, altered bowel habit and prolapse of polyp or rectum.<sup>9</sup> GI carcinoma should be included in the differential diagnosis list of chronic abdominal pain. Endoscopic and abdominal imaging (computed tomography and magnetic resonance imaging) may reveal the mass lesion. Lapatomy is usually needed (for surgical resection) and is obligatory for staging. In the presence of metastasis, chemotherapy is not beneficial.<sup>10</sup>

The risk of development of colorectal cancer

in patients with colitis due to Crohn's disease is as high as in patients with ulcerative colitis. It's prognosis in children is poor.<sup>10</sup>

The patient presented in this report had been diagnosed about 3 months after the initial presentation. She had received treatment for infectious diarrhea without improvement and her family history of colon cancer didn't grab the attention of the previous doctors. As adenocarcinoma is rare in the age of our patient she was clinically considered to have benign polyposis. However this disease is rare in children and also the involvement of rectum in children is much lower than adult colon adenocarcinoma, it should be considered in all children with polyposis especially with a positive family history.

#### ORCID ID:

Hedayatollah Nahvi  <https://orcid.org/0000-0002-2082-4280>

Rahman Khosravi  <https://orcid.org/0000-0002-2505-2371>

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