

## CUTANEOUS MANIFESTATIONS IN INFLAMMATORY BOWEL DISEASES IN PATIENTS ATTENDING TO A TERTIARY CARE CENTRE IN NORTH KERALA

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### ABSTRACT

#### BACKGROUND

Ulcerative colitis and Crohn's disease are Inflammatory Bowel Diseases (IBD) that have many common cutaneous manifestations. At the time of diagnosis of IBD, the mean incidence of cutaneous manifestations is around 10%. However, during the course of the disease, a variety of skin lesions may develop.

The aim of this study is to study the prevalence of cutaneous manifestations in inflammatory bowel disease patients attending Medical College Hospital, Calicut, from November 2004 to November 2005.

#### MATERIALS AND METHODS

72 Consecutive patients presenting to the Outpatient and Inpatient Departments of Gastroenterology with inflammatory bowel disease are the subjects of the study. Patients presenting with bleeding per rectum or diarrhoea are evaluated by sigmoidoscopy or colonoscopy as part of investigative workup. Histopathological examination is done when indicated. Patients who are already diagnosed cases of inflammatory bowel disease either ulcerative colitis or Crohn's disease and followed up in Gastroenterology Outpatient Department were examined for skin manifestations. Detailed history was taken and clinical examination done. Biopsy of the skin lesion was done in indicated cases. Routine blood tests were done including blood counts, blood sugar, renal and liver function tests.

#### RESULTS

A total of 72 patients with inflammatory bowel disease who attended the Outpatient and Inpatient Departments of Gastroenterology were studied. There were 67 (94%) cases of ulcerative colitis and 5 (6.9%) cases of Crohn's disease. Skin manifestations were seen in 19 (26.3%) patients, 17 (89.4%) were ulcerative colitis and 2 (10.5%) were Crohn's disease patients.

#### CONCLUSION

26.3% of patients with inflammatory bowel disease had cutaneous manifestations. Patients with ulcerative colitis had more prevalence of cutaneous manifestations than Crohn's disease. Pyoderma gangrenosum was the most common cutaneous manifestation seen in inflammatory bowel disease and was seen in 6.9% of patients. Erythema nodosum was the second commonest cutaneous manifestation and was seen in 4.16% of patients. Rare cutaneous manifestations like metastatic Crohn's disease and pyoderma vegetans is reported in our patients. Cutaneous manifestations are more common in the initial 5 years of diagnosis of the inflammatory bowel disease.

#### KEYWORDS

Cutaneous, Inflammatory Bowel Disease, Ulcerative Colitis, Crohn's Disease, Pyoderma Gangrenosum, Erythema Nodosum, Pyoderma Vegetans.

**HOW TO CITE THIS ARTICLE:** Sandesh R, Kolassery S. Cutaneous manifestations in inflammatory bowel diseases in patients attending to a tertiary care centre in north Kerala. J. Evid. Based Med. Healthc. 2017; 4(30), 1765-1768. DOI: 10.18410/jebmh/2017/343

#### BACKGROUND

Ulcerative colitis and Crohn's disease are Inflammatory Bowel Diseases (IBD) that have many common cutaneous manifestations. At the time of diagnosis of IBD, the mean

incidence of cutaneous manifestations is around 10%.<sup>1</sup> However, during the course of the disease, a variety of skin lesions may develop.<sup>1</sup> It is also significant that the cutaneous lesions may antecede the intestinal signs or symptoms by many years.

#### AIMS AND OBJECTIVES

These cutaneous manifestations may be classified into three principal classes, granulomatous, reactive and secondary to nutritional deficiency.<sup>2</sup> Granulomatous cutaneous lesions have the same histological features of the bowel disease and include perianal and peristomal ulcers and fistulas,<sup>3</sup> metastatic Crohn's disease and oral

*Financial or Other, Competing Interest: None.  
Submission 21-03-2017, Peer Review 28-03-2017,  
Acceptance 04-04-2017, Published 11-04-2017.*

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*DOI: 10.18410/jebmh/2017/343*



granulomatous ulcers. Reactive lesions include aphthous stomatitis, erythema nodosum, pyoderma gangrenosum and Sweet's syndrome.<sup>4</sup> Lesions secondary to nutritional deficiency include acrodermatitis enteropathica, phrynoderma, cheilitis, glossitis, etc. Miscellaneous associations include epidermolysis bullosa acquisita,<sup>5</sup> erythema multiforme, urticaria, psoriasis,<sup>6</sup> vitiligo,<sup>7</sup> etc.

**MATERIALS AND METHODS**

Study period extended from November 2004 to November 2005. Consecutive patients presenting to the Outpatient and Inpatient Departments of Gastroenterology with inflammatory bowel disease were the subjects of the study. Patients presenting with bleeding per rectum or diarrhoea were evaluated by sigmoidoscopy or colonoscopy as part of investigative workup. Histopathological examination was done when indicated. Patients who were already diagnosed cases of inflammatory bowel disease either ulcerative colitis (UC) or Crohn's disease and followed up in Gastroenterology Outpatient Department were examined for skin manifestations.

**Inclusion and Exclusion Criteria**

Detailed history was taken and clinical examination done. Biopsy of the skin lesion was done in indicated cases. Routine blood tests were done including blood counts, blood sugar, renal and liver function tests.

**RESULTS**

A total of 72 patients with inflammatory bowel disease who attended the Outpatient and Inpatient Departments of Gastroenterology were studied. There were 67 (94%) cases of ulcerative colitis and 5 (6.9%) cases of Crohn's disease. Out of the 67 cases of ulcerative colitis, 44 (65%) were males and 23 (35%) females. Of the 5 cases of Crohn's disease, 1 (20%) was male and 4(80%) were females. The age of the patients varied from 16 years to 87 years with the mean age of 41 years. Patients with ulcerative colitis, mean age was 47 years with a range of 16-87 years. Patients with Crohn's disease, mean age was 24 years with a range of 16-35 years. Skin manifestations were seen in 19 (26.3%) patients, 17 (89.4%) were ulcerative colitis and 2 (10.5%) was Crohn's disease patients. Out of 18 patients with cutaneous manifestations, 11 (61%) were males and 7 (38%) were females. The cutaneous manifestations detected were pyoderma gangrenosum, pyoderma vegetans, erythema nodosum, oral aphthae, clubbing, perianal tags, psoriasis and metastatic Crohn's. Pyoderma gangrenosum was seen in 5 (7%) patients of which 4 (5.6%) were ulcerative colitis and 1 (1.4%)<sup>8,9</sup> Crohn's disease. Of the 4 patients with ulcerative colitis, 2 (50%) were males and 2 (50%) were females. The Crohn's disease patient was a female. The mean age was 35 years with age ranging from 18 years to 50 years. Erythema nodosum was seen in 3 (4.2%) patients and all were with ulcerative colitis. 2 (66%) were females and 1 (33%) was a male patient. Mean age was 41 years with age ranging from 32-50 years. Metastatic

Crohn's was seen in 1 patient (1.3%). A female patient with Crohn's disease presented with multiple erythematous and skin-coloured papules on an infiltrated skin distributed over upper back and upper arms. Histological examination showed non-caseating granulomas in the dermis composed of epithelioid cells and multinucleated giant cells with a lymphohistiocytic infiltrate. The following findings were in ulcerative colitis patients only.<sup>10,11</sup> Pyoderma vegetans was seen in 1 (1.4%) male patient. Oral aphthae was seen in 3 (4.2%) patients. Perianal tags was seen in 1 (1.4%) patient. Nails changes like clubbing was seen in 4 patients. Psoriasis was seen in 2 (2.8%) patients.

	Total Number of Cases	Ulcerative Colitis	Crohn's Disease
	72	67(93.1%)	5(6.9%)
Males	47	44(93.6%)	1(2.1%)
Females	25	23(92%)	4(8%)

**Table 1. Distribution of Cases According to Gender**

Skin Manifestations	Number of Cases
Pyoderma gangrenosum	5 (26.3%)
Pyoderma vegetans	1 (5.3%)
Metastatic Crohn's disease	1 (5.3%)
Erythema nodosum	3 (15.7%)
Oral aphthae	3 (15.7%)
Perianal tags	3 (15.7%)
Nail changes	1 (5.3%)
Psoriasis	2 (10.5%)
<b>Total</b>	<b>19</b>

**Table 2. Prevalence of Skin Manifestations in Inflammatory Bowel Disease**

	Number of Cases with Skin Manifestations
Crohn's disease	2(10.5%)
Ulcerative colitis	17(89.4%)
<b>Total Cases</b>	<b>19</b>

**Table 3. Prevalence of Skin Manifestations in UC and Crohn's**

Age Group	Total Number of Cases	Males	Females
11-20	4	1(1.4%)	3 (4.2%)
21-30	17	11 (15.3%)	6(8.3%)
31-40	18	13(18.1%)	5(6.9%)
41-50	13	7(9.7%)	6(8.4%)
51-60	9	9(12.5%)	0
61-70	8	6(8.3%)	2(2.8%)
71-80	1	1(1.4%)	0
81-90	1	1(1.4%)	0
<b>Total</b>	<b>72</b>		

**Table 4. Prevalence of Skin Manifestations According to Age and Gender**

Duration of Inflammatory bowel Disease	Number of Cases with Skin Manifestations
<1 year	26 (41.9%)
1-5 years	25 (40.3%)
5-10 years	16 (25.8%)
11-15 years	3 (4.8%)

>15 years	1 (1.6%)
<b>Total</b>	<b>62</b>
<b>Table 5. Prevalence of Skin Manifestations According to Duration of Inflammatory Bowel Disease</b>	

## DISCUSSION

Cutaneous manifestations of IBD are relatively common, although the reported incidence of these extraintestinal manifestations varies widely.<sup>1-14</sup>At the time of diagnosis of IBD, the mean incidence of cutaneous manifestations is around 10%.<sup>14</sup>

In the present study, the incidence of cutaneous manifestation was higher (26.3%). Dermatological complications occur more frequently in women than in men. In this study, the incidence was more in males 11 (57.8%), than in females 8 (42%). Skin manifestations occur with a reported frequency of 2-35% in patients with ulcerative colitis and 9-23% in patients with Crohn's disease. Greenstein et al reported 19% in ulcerative colitis and 14% in Crohn's disease.<sup>14</sup>In the present study, cutaneous manifestations seen in ulcerative colitis was 24% and 1.4% in Crohn's disease.

Erythema nodosum is one of the most common skin lesions and appears clinically in conjunction with symptoms of active bowel disease. The prevalence of erythema nodosum in patients with IBD is 3-80%.<sup>14</sup>It is most common in females. It has been reported in upto 90% of patients with ulcerative colitis and in upto 15% of patients with Crohn's disease.<sup>14</sup> Erythema nodosum was the most common skin manifestation in a study of 415 patients with ulcerative colitis reported by Johnson and Wilson in 1969,<sup>10</sup> whereas only 5% of these patients had any cutaneous manifestations, erythema nodosum accounted for 40% of the lesions observed, i.e. 20% of the total patient population. All patients with erythema nodosum were women and the mean age of affected subjects was 29 years. In our study, the prevalence is 4.2% and was seen only in ulcerative colitis. Females had higher prevalence 66%. Mean age was 41 years and age ranged from 32-50 years.

Pyoderma gangrenosum is the most severe skin lesion associated with IBD. It has been reported with a frequency as high as 12% in ulcerative colitis. It is an unusual lesion in patients with Crohn's disease reported in only 1-2% of cases. Osdil S et al reported 2.4% prevalence in ulcerative colitis. Freeman et al reported prevalence of 0.7% in Crohn's disease. Neither sex predominates. The present study showed a prevalence of 5 (7%) in inflammatory bowel disease, 5.6% occurring in ulcerative colitis and 1.4% in Crohn's disease.

Metastatic Crohn's disease is a rare granulomatous extraintestinal manifestation of Crohn's disease. Only about 80 cases have been reported in published literature. Nongenital involvement is seen in 44% cases. Our study included a patient who presented with papules on upper back and upper arms.

Oral lesions both symptomatic and asymptomatic occur in inflammatory bowel disease with a reported incidence of

6 to 20% in Crohn's disease. Similar lesions in ulcerative colitis are less well documented, although Edwards and Truelove reported an incidence of over 80%. Recurrent aphthous ulceration is the most common manifestation described. Recurrent oral aphthae was the most common oral lesion in our study with a prevalence of 4.2%. All the cases were reported in ulcerative colitis.

Perianal lesions are not a manifestation of classic ulcerative colitis as it is currently defined. In some cases inflammation in the anal crypts of Morgagni produces red, swollen, fleshy anal tags. These may progress to fissure-in-ano and abscesses.<sup>11</sup>In our study, perianal tags were seen in one case of ulcerative colitis.

An association between IBD and psoriasis has been observed.<sup>15</sup> Psoriasis occurs in 1-2% of population compared with 7-11% of patients with IBD.<sup>16,17,18</sup> In our study, 2 patients with ulcerative colitis had psoriasis.

The association of pyoderma vegetans and IBD is very rare in the literature. One of our ulcerative colitis patients had pyoderma vegetans.

## CONCLUSION

26.3% of patients with inflammatory bowel disease had cutaneous manifestations. Cutaneous manifestations were seen more in males (57.8%) than in females (42%) though the difference was not statistically significant.<sup>19,20</sup>Patients with ulcerative colitis had more prevalence of cutaneous manifestations than Crohn's disease, which was not statistically significant. Pyoderma gangrenosum was the most common cutaneous manifestation seen in inflammatory bowel disease and was seen in 6.9% of patients. Erythema nodosum was the second commonest cutaneous manifestation and was seen in 4.16% of patients. Rare cutaneous manifestations like metastatic Crohn's disease and pyoderma vegetans is reported in our patients. Cutaneous manifestations are more common in the initial 5 years of diagnosis of the inflammatory bowel disease.

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