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Coeliac Disease: Common Presentations and Diagnostic Values of Distal Duodenal Biopsy (DDB)

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SUMMARY

Twenty six patients who presented with the complaints of chronic diarrhoea or failure to thrive were evaluated as possible cases of coeliac disease. After routine investigations patients were subjected to oesophagogastrodudenoscopy (EGD) and distal duodenal biopsy (DDB). Seventeen (65.3%) patients had decreased number or height of mucosal folds on EGD had typical finding of coeliac disease on DDB. Fifteen (88.24%) patients presented with off and on diarrhoea and all 17 (100.00%) patients had failure to thrive. Majority of patients 16 (94.11%) were anaemic, while 8 (47.06%) presented with abdominal distention. Muscle wasting (41.18%), oedema (5.88%) and clubbing (17.65%) were some of the presenting signs. All the patients were placed on gluten free diet and showed clinical improvement.

INTRODUCTION

Coeliac disease is a malabsorptive disorder caused by a characteristic lesion of small intestinal mucosa, produced by protein constituent (gluten) of some cereal grains. On withdrawal of gluten there is prompt clinical and histological remission[1].

The disease is world wide in its distribution, however the incidence varies considerably in different parts of the world. The highest incidence (1 in 300) has been reported in West Ireland[2].

Coeliac disease is more common in infantile age group and presents frequently with gastrointestinal symptoms. Other symptoms include growth failure, irritability, delayed puberty and nutritional deficiencies including anemia[3,4].

Demonstration of typical mucosal lesion by small intestinal biopsy remains the key step in diagnosis of coeliac disease. Diagnostic criteria of coeliac disease, known as ESPGAN criteria, revised in 1989, includes[5,6].

1. Finding of a characteristic mucosal lesion on biopsy.
2. Clinical remission on a strict gluten free diet.

Demonstration of mucosal damage during gluten challenge is not essential for diagnosis except in situations where there is doubt about the initial diagnosis. Various serologic markers such as antigliadin antibodies aid to the diagnosis[7-9].

The purpose of the present study was to investigate the presence of coeliac disease in patients suspected to have intestinal malabsorption.

PATIENTS AND METHODS

We prospectively studied 26 patients, ranging in age between 18 months to ten years. These patients visited the outpatient department of Shaikh Zayed Hospital Lahore, where they were suspected to have coeliac disease on clinical grounds during the year 1994. All of them were admitted for further workup. Oesophagogastro-duodenoscopy (EGD) and distal duodenal biopsy (DDB) were performed in the department of gastroenterology of Shaikh Zayed Hospital. Number and height of mucosal folds were recorded and 2 biopsy specimens were taken from distal duodenum. All specimens were routinely processed and examined by a consultant histopathologist.

RESULTS

Out of the total 26 patients, 9 were found to have symptoms due to other causes. They had normal number and size of mucosal folds on EGD and biopsy showed histologically normal duodenal mucosa, while 17 patients were diagnosed to have coeliac disease.

The ages of our patients ranged from 18 months to 10 years with a mean age of 5.79±2.5 yr. Nine patients were male and 8 were females with male to female ratio of 1.1:1. Major manifestations of these patients are summarized in Tables 1 and 2.

Table 1: Major manifestations of coeliac disease (n=17).

Symptoms	*Number*	*Percent*
Failure to thrive	17	100.00
Diarrhoea	15	88.24
Vomiting	4	23.53
Abdominal pain	4	23.53
Abdominal distension	8	47.06
Irritability	3	17.65

Table 2: Major manifestations of coeliac disease (n=17).

Signs	*Number*	*Percent*
Height < 25 percentile	17	100.00
Weight < 25 percentile	17	100.00
Wasted muscle	7	41.18
Oedema	1	05.88
Clubbing	3	17.65

Out of the 17 patients, who were diagnosed as cases of coeliac disease, all (100%) had complaint of failure to thrive. Fifteen (88.24%) had off and on diarrhoea as major presenting complaint, 10 (58.82%) had steatorrhea, 4 (23.53%) had c/o vomiting and 8 (47.06) had complaint of abdominal distension (Table 1). Significant muscle wasting was found in 6 patients (41.18%), while only 3 patients (17.65%) had clubbing and 1 patient (05.88%) had oedema (Table 2). Majority of patients i.e., 16 out of 17 (94.11%) were anemic with hemoglobin ranging from 5.7 g/dl to 11.6 g/dl with a mean value of 8.27 g/dl. Age, duration of symptoms, and important laboratory investigations are shown in Table 3.

Thirteen patients had decreased number or height of mucosal folds on EGD, in four patients the appearance of mucosal folds was normal. However there was evidence of subtotal/partial villous atrophy and findings typical of coeliac disease in all these patients (Figs. 1 and 2). They were started on gluten free diet and were followed up on regular basis in our outpatient department. All of them showed rapid clinical improvement on gluten free diet.

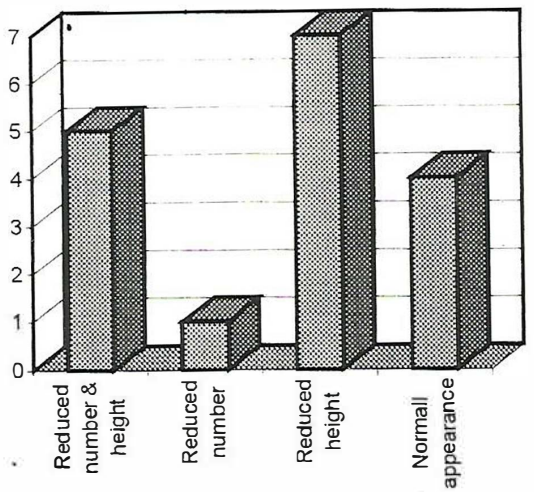

Fig. 1: Findings on EGD.

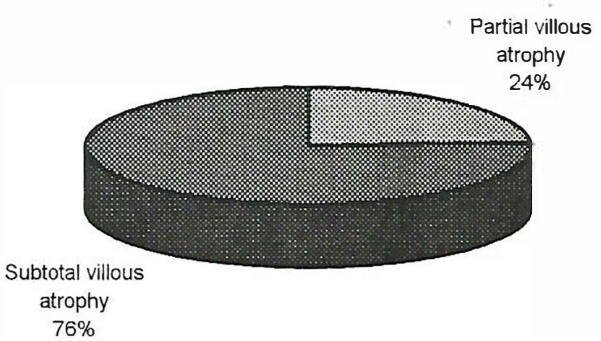

Fig. 2: Histological diagnosis.

Table 3: Age, duration of symptoms and important laboratory findings.

Parameters	*Mean±SD*	*Maxi. value*	*Mini. value*
Age in years	5.8±02.5	1.5	10
Duration of symptoms months	19.9±20.0	0.5	60
Haemoglobin (gm/dl)	8.3±01.7	5.7	11.6
S. Calcium (mg/dl(	8.0±00.6	7.1	9.1
S. Phosphorus (mg/dl)	04.4±02.1	2.0	10.1
Alkaline phos. (U/L)	555±392.0	113	1516
Total protein (gm/dl)	6.8±01.1	5.1	8.7
Albumin (g/dl)	03.9±00.9	2.2	5.2

Endoscopic appearance of mucosal folds and biopsy findings are shown in Table 2 and 3.

DISCUSSION

An early diagnosis of coeliac disease is very important because the disease responds well to a gluten free diet and dietary treatment alone can prevent serious complications of coeliac disease like intestinal lymphoma[10].

In our study we investigated patients who presented with features of malabsorption. We found that 100% of our patients of coeliac disease had growth failure. The next most common symptom was chronic diarrhoea which was found in 88.24% of patients. Other common features were abdominal distension, abdominal pain, and muscle wasting. A few patients presented with features of growth failure alone. Signs and symptoms of coeliac disease vary a different ages. Its presentation in older children may be completely different[11]. In younger age group, diarrhoea is the most common symptom while in older age group, non-specific recurrent abdominal pain and isolated growth failure may predominate[12].

So a high index of suspicion is very important and all patients presenting with complaints of chronic diarrhoea or failure to thrive or abdominal distension etc. should be thoroughly evaluated. EGD should be done and biopsy specimen should be collected, at the same time decreased number or height of mucosal folds on gross examination has a clear relation with histologic feature of coeliac disease[13] but normal number and appearance of mucosal folds on EGD does not exclude the diagnosis of coeliac disease.

Clinical findings of other malabsorption syndromes may mimic coeliac disease as found in the study, so jejunal biopsy is required for the definite diagnosis of coeliac disease.

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