INTRODUCTION

Celiac Sprue or Celiac Disease (CD) also known as gluten sensitive enteropathy is an inflammatory disorder of the small intestine, caused by the exposure to dietary gluten in genetically susceptible individuals. Dietary gluten provokes inflammation in the small intestine, characterized by accumulation of the intra-epithelial lymphocytes, development of crypt hyperplasia, and ultimately, villous atrophy. In the majority of cases, the disease enters complete clinical and histologic remission when gluten is eliminated from the diet. Until fairly recently, CD was thought to be relatively rare disorder with prevalence rates 0.1%. More recent studies showed that Celiac Sprue is a common disease affecting an average one in 200 white individuals. This change in prevalence may be related to increasing physician awareness as well as improved diagnostic methods. The prevalence of Celiac Sprue in India is not documented, but is quiet prevalent in North West India. The diagnosis of CD may be difficult because only a proportion of these with histological abnormalities exhibit classical symptoms of CD. More than 50% of CD patients have no GI symptoms or only non specific complaints such as dyspepsia or anorexia. On the other hand, growing body of evidence shows that early diagnosis and treatment can reduce the risk of malignant complication such as lymphoma. The gold standard for the diagnosis of CD is histopathology of the small bowel. Recently, serologic tests have been introduced as a screening tool. These include IgA anti-endomysial antibodies (AEA), IgA tissue-transglutaminase (tTG), IgA antigliadin antibodies (AGA) and IgG AGA antibodies. Although the sensitivity and specificity of these tests are high, false negative results can occur in mild enteropathy and in patients with IgA deficiency. Genetic testing of HLA-DQ2 and HLA-DQ8 may facilitate the diagnosis. According to revised criteria of the European Society of Paediatric Gastroenterology and nutrition, unequivocal diagnosis of CD requires characteristic histological findings with clinical response to a gluten free diet. Recently, with the advent of capsule endoscopy (CE) in the clinical practice which has the advantage of scanning the entire small bowel and gives highly magnified and detailed view of mucosa has facilitated the diagnosis to great extent. Moreover, CE is painless, well tolerated and safe diagnostic procedure. This article presents new frontiers in diagnosis, role of capsule endoscopy, and the first case of diagnosis of CD by CE in India.
digital cameras, and it can operate at very low levels of illumination. The capsule obtains two images per second and transmits the data via radio frequency to a recording device worn about a patient’s waist. Once the acquisition time is reached, the recording device is downloaded to a computer workstation where software provides the images to the computer screen. The capsule is disposable and does not need to be retrieved by the patients. It is passed naturally. An average of 50,000 images is obtained during an eight hour exam.

CASE REPORT

We present you the first reported case of diagnosing CD by CE in India.

A 47 years non hypertensive, non diabetic, Sindhi female from Surat presented with complaints of recurrent diarrhoea, chronic dyspepsia (gastroesophageal reflux disease), anaemia and weight loss.

Upper GI endoscopy was suggestive of inflammatory gastritis and erosive duodenitis. Colonoscopy showed nothing apart from pale mucosa. She had significantly low Serum B12 levels (196 pg/ml), small bowel enema was reported as normal. Was treated initially with the help of PPIs and then started on steroids and 5-ASA with some symptomatic relief. On later investigations, C-ANCA was positive and Endomysial IgA (AEA) was elevated (25.7), which indicated coeliac etiology.

The capsule endoscopy was performed on the patient, which showed that the entire length of the jejunum and ileum had diffuse blunted villi (Fig. 1). In the few areas of distal jejunum and proximal ileum, few erosions and small superficial ulcers were seen. There was significant mucosal oedema in one area of the proximal ileum (Fig. 2). Incidental finding was of an angioectasia in proximal jejunum (Fig. 3). It seems that thin, atrophic and featureless looking mucosa on CE may signify more severe and possibly refractory disease. The extent of bowel involvement appears to correlate with severity of symptoms.

DISCUSSION

CE exhibits some features that are different than those of conventional endoscopy. First, CE is painless and does not require sedation. The test is easy to perform, and no special facilities are required. Second, CE is done without air insufflations. This allows for the capsule “window” to slide close to the bowel wall, providing excellent visualization of the bowel mucosa. Due to magnification power of X8, the CE images of the small bowel mucosa may be comparable to those seen under the dissecting microscope. Third, CE provides an opportunity to explore the entire length of the small bowel. All these features make CE an attractive tool for assessment of the patients with CD.

To our knowledge, as of now there have been no other published data on CE in CD from India, although Rima Petroniene et al5 from Canada have been performing a study dedicated to describe CE markers in CD, and to establish the accuracy of the CE in recognizing villous atrophy as compared with histology. They have hypothesized that villous atrophy can be easily recognized on the capsule images of the small bowel and that this non-invasive method could potentially be used in assessment of patients with CD.

When compared with normal small bowel, mucosa of patients affected with CD looks dramatically different on CE. In general, most endoscopic markers of CD as described on the literature are seen with greater clarity by CE regarding scalloping of the folds, mosaicism, nodularity, visible vessels and loss/reduction of folds. CE also allows for approximate estimation of the length of the bowel involved with CD. It seems that thin, atrophic, and featureless looking mucosa on CE may signify more severe and possibly refractory disease.
extent of bowel involvement appears to correlate with severity of symptoms.

Our experience suggests that CE provides good quality images of the small bowel mucosa, including well defined villi. Dedicated CE studies on larger samples are necessary for description of typical CE markers in CD and for more accurate conclusion about the value of the method in recognizing villous atrophy. There is little doubt that the test may expand our knowledge of CD, especially with respect to the extent of bowel involvement. In addition, studies are warranted at evaluating the value of CE in diagnosing complications of CD, such as T-cell lymphoma, small bowel adenocarcinoma, and ulcerative enteritis. Furthermore, there may be a role of CE in patients with other malabsorption conditions, which needs to be investigated.

REFERENCES


Announcement

Theme: Endocrinology, Diabetes and Metabolism – from bench to bedside
Venue: Scudder Auditorium, CHTC Auditorium, Senate Hall, Christian Medical College, 632002, TamilNadu.
Highlights: 25 International and 25 national faculty of repute.
For further details, please contact: Organizing Secretary, Winter Symposium, 2007, Department of Endocrinology, Diabetes and Metabolism, Christian Medical College, Vellore- 632004, TamilNadu, India.
E-mail: wintersymposium@yahoo.com, nihal_thomas@yahoo.com
Website: www.wintersymposium.org
Phone: ++91-416- 2282528/2282491/ 2282163 or 2222102 Extn. 2163/ 2491/ 2528