

## Pseudopolyps in Inflammatory Bowel Diseases: A lot yet to Explore About

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### Introduction

Inflammatory bowel diseases (IBD) are chronic inflammatory disorders of unknown etiology affecting gastrointestinal tract. IBD comprise ulcerative colitis (UC) and Crohn's disease (CD) [1]. Pseudopolyps are polypoid tags of mucosa that are encountered during endoscopy in subgroup of IBD patients. They are considered the result of repetitive periods of ulceration and re-healing of the mucosa after severe episodes of inflammation [2]. Their reported prevalence is 10-20% in IBD patients [3].

### Do patients with pseudopolyps present specific characteristics?

The reasons that a specific group of IBD patients develop pseudopolyps remain unclear, considering also the fact that not all the patients with severe course of IBD will develop pseudopolyps. To our knowledge, there is only one study from Babic et al. [4] reporting that increased values in two of the three following parameters C-reactive protein (CRP), C4 and procollagen III peptide have a positive predictive value up to 90% for prediction of pseudopolyps' formation in UC patients. Epidemiology does not also assist to identify specific phenotypic characteristics of IBD patients with predisposing in formation of pseudopolyps. Prevalence of pseudopolyps is alike in both sexes and their peak incidence is at the age group of second to fourth decade similar to peak that IBD patients are diagnosed [5]. In the same context, location of pseudopolyps and duration of IBD does not help to deduce reliable results concerning specific phenotypic characteristics of IBD patients with pseudopolyps. The incidence of pseudopolyps increases with extensive colitis as a reasonable consequence of a more severe disease course that patients with extended location of IBD, experience [6]. IBD duration does not also influence their incidence as Jalan et al. [5] reported that 33% of UC patients with pseudopolyps were less than 5 months diagnosed with UC.

### Does the presence of pseudopolyps play any role in IBD patients?

The importance of identifying predictive phenotypic factors for developing pseudopolyps in IBD patients comes from the fact that this group of patients experience a near 2-fold increased risk for colorectal cancer as showed by Rutter et al. [7] and therefore they have to be under endoscopic surveillance at a 3 years interval [8]. The link between pseudopolyps and colorectal cancer is not yet fully clarified. Pseudopolyps as entities are considered benign [9] with rare case reports of dysplasia [10] and in-situ carcinoma [11] found in giant pseudopolyps, meaning above 1.5 cm in size [12]. Mainly the correlation between pseudopolyps and colorectal cancer can be explained by the fact that both their incidence rises in patients with extensive colitis and longer periods of severe active disease [13,14]. Secondly, numerous pseudopolyps can obscure endoscopic discovery of dysplastic lesions [15]. These causes explain the increased risk of colorectal cancer in patients with pseudopolyps sufficiently but cannot describe entirely any causative relationship between pseudopolyps and occurrence of colorectal cancer in IBD [16].

### Is there any difference in therapeutic goals in patients with pseudopolyps?

Pseudopolyps can be found in endoscopy in both periods of disease's activity and remission [17]. Therefore their presence cannot be used as a marker of IBD activity [18] and they are not included in any endoscopic score of monitoring IBD [19]. Until now, therapeutic strategies are not influenced by the endoscopic discovery of pseudopolyps in IBD patients [20,21]. In addition, there are not existing solid data in bibliography about superiority of any class regimen in reducing their number or predisposition to their formation [16]. It is considered that once they are formed they are rarely regressing [5]. However, in the recent years there are reports of cases that pseudopolyps regressed with the use of medical therapy such as mesalazine, azathioprine [22] and infliximab [23]. We had a similar experience in our department with a patient with steroid

dependent left sided UC refractory to azathioprine and anti-TNF $\alpha$  biological treatment. The patient achieved remission with vedolizumab and we observed a significant reduction in the number of pseudopolyps in comparison with previous endoscopies where either the number was rather stable or increased in periods of flares. From this point of view, the reduction of pseudopolyps' number may serve as a separate endoscopic marker of disease's activity but well designed studies are certainly needed to evaluate this perspective. As concluding remark, there are scarce data that regression of pseudopolyps can be achieved with medical treatment and this may be a secondary therapeutic goal if it is combined with a prediction of prominent remission in IBD course.

## Conclusion

Pseudopolyps affect a significant subgroup of IBD patients and even if some aspects of their pathogenesis and their benign nature have been clarified [24], questions remain about the predictive factors about their formation and the medical treatment targeting to their reduction [25]. Until now their clinical significance is restricted to their link with colorectal cancer. Further studies can evaluate their behavior in conjunction with medical treatment. In addition, the differentiation of their characteristics may correlate with prediction of IBD course, so their presence and exact type may serve as separate marker in future endoscopic scores. In order to clarify these aspects, better description of their characteristics in endoscopy is required; especially reporting their number and their variation in number in periods of remission and flares in conjunction with modifications of treatment [26].

## Author Contributions

All authors have made equally substantial contributions to the conception and design of the article, drafting or revising it critically for important intellectual content. All authors have provided final approval of the version to be submitted.

## Conflict of Interest

All authors declare no potential conflicts of interest

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