Extra-Intestinal Complications and Manifestations (Ocular and Pulmonary) among Patients with Crohn's Disease

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because of the molecular mimicry is also thought to be participating in the pathology [23].

Episcleritis

It is one of the commonest manifestation in relation to the eye secondary to inflammatory bowel disease with the incidence of 29% [25], there is a relation between episcleritis and Crohn's disease in which episcleritis indicates the CD activity [23].

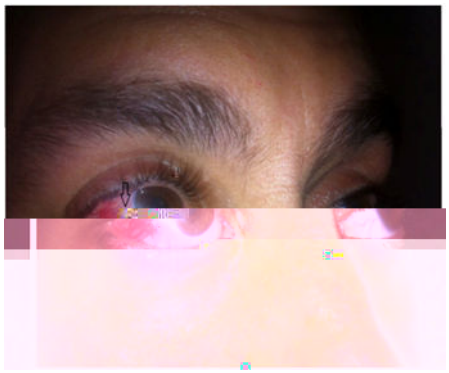

Figure 1: Figure showing dilated, inflamed scleral vasculature and a prominent nodule (black arrow) [24].

Scleritis

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Scleritis is less prevalent complication of IBD compared to episcleritis, with a reported incidence of 18% by Barabino [25], while the more recent reported incidence by Galanopoulos was 2-5% (Figure 1) [27], scleritis is unlike episcleritis it does not indicate active CD as it can occur in quiescent IBD. 50% of scleritis patients are having a systemic disease underlying, work up should be initiated to discover the underlying systemic disease as inflammatory bowel disease.

The management of scleritis must be with conjunction of gastroenterologist and must be with aggressive-systemic treatment with systemic steroids and non-steroidal anti-inflammatory drugs or immunosuppression therapy [23].

Anterior uveitis

It is described as an intraocular structures inflammation and it is divided into posterior uveitis, anterior uveitis, and panuveitis. Inflammatory bowel disease might present with panuveitis and posterior uveitis, but it typically presents with non-granulomatous acute anterior uveitis, it has no relation to the disease activity as it occurs in both active and quiescent periods, but it can lead to the diagnosis of inflammatory bowel disease [23]. A well-established relation of Crohn's disease, acute iritis, and sacroiliitis, has been found as they tend to be positive to HLA-B27.

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exudates, the ileocecal valve was normal, many skin tags and anal fssures were observed, biopsy was taken and it confrmed the diagnosis of Crohn's disease.

Very few available data of pediatrics dry-eye syndrome prevalence, as it's less frequently appears in pediatric age, so that it's obviously challenging to diagnose and manage dry-eye syndrome in children, in fact it is important to be cautious in pediatric age group in order not to neglect this uncommon presentation and be carious to look up and search for associated possible systemic disease with an efort to identify the local and systemic symptoms and signs to provide a curative treatment of the disease it-self and prevent its subsequent complications [30].

Best corrected visual acuity	20/400 OU
Cycloplegic refraction: Oculus Dexter (OD) Oculus Sinister (OS)	−9.0 −4.50*50 −9.75, −3.75*140
Intraocular pressure	20 and 16 mm of Hg OD and OS, respectively.
Slit lamp	Low tear meniscus, tear break-up time more than 10 s
Cornea	Opacity, inferior neovascularization, large epithelial defect OU.
Iris	Normal OU
Anterior chamber	Deep, with occasional cells OU
Lens	Early posterior sub-capsular cataract OU5
Vitreous	Clear OU
Fundus	Normal OU

Ocular complication of CD	Incidence	Year
Orbital myositis [29]	8-11%	2008
Episcleritis [25] Scleritis [25] Uveitis [25]	29% 18% 17%	2011 2011 2011
Posterior segment Manifestation [25]	1-30%	2011
Optic neuritis [25]	0.08%	2011
Dry eye syndrome in children [30]	1-2%	2015
Scleritis [27]	2-5%	2016

Table 3: Incidence of ocular complications correlating with years.

Incidence of the pulmonary complication reported as relatively rare extra intestinal manifestation of Crohn's disease; 21% to 41% of patients with IBD patients had pulmonary complications and are more common in Crohn's disease (CD) than in ulcerative colitis (UC), 400 cases with CD has been recognized and reported in the literature with pulmonary involvement [32-37], it's occasionally possibly causing serious illness that needs pulmonary evaluation, a wide spectrum of lung manifestations , extending from subclinical changes without any symptoms, upper and lower airway diseases, parenchymal diseases of lung up to pleural involvement in addition to medication side effects. The most obvious complication is bronchial inflammation and suppuration with or without bronchiectasis. Pulmonary complications are unusual and its pathophysiology remains unclear [34,37], but there are many mechanisms thought to be the reason of lungs involvement in CD, these include the same embryological origin of the lung and gastrointestinal tract, similar immune systems in the pulmonary and intestinal mucosa, the presence of circulating immune complexes and auto-antibodies, and the adverse effects of some drugs used to treat Crohn's disease [34,36], there is no explanation whether pulmonary involvement occurs secondary to the drugs or to the underlying disease process [37]. Intestinal disease activity is considered as the main indicator for the development of pulmonary disease, it's important to the physician possibility for the development of pulmonary disease in patients with Crohn's disease; this is to start the ideal treatment early in order to decrease other further complications [34,37], by undergoing pulmonary evaluation of physical examination, chest X-ray and pulmonary function tests are mandatory in addition to calculate diffuse lung capacity of carbon monoxide to reach a final diagnosis, bronchoscopy and thoracoscopymay be helpful [34]. IBD patients showed impairment of pulmonary function test in some previous studies, whereas other studies do not, and some of them reported that the impairment in pulmonary function test associated with the disease activity, so that there is a recent prospective study carried out by Xiao-Qing Ji in 2016 with an aim of investigating the alterations of pulmonary function tests (PFTs) and their relation with the disease activity in inflammatory bowel diseases, they concluded that PFTs in IBD patients showed subclinical abnormalities some of which could be detected even in the remission periods and become

the disease activity. Further work on pulmonary manifestations to make full explanation on whether pulmonary disease is secondary to the drugs or to the underlying disease process.

Conflict of Interest

The authors declared that there was no conflict of interest.

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