JEIMP
THE SCIENCE
Journal of
European Internal Medicine Professionals
J Eur Int Med Prof
2023, Volume 1(4)

10.5281/zenodo.10019776
Case Report

Bilateral Subcapsular Cataract in A Patient with Crohn's Disease Taking Oral Budesonide Therapy: A Case Report

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Received: 28.02.2023 **Accepted**: 23.03.2023 **Published**: 20.10.2023

ABSTRACT
Crohn's disease is a chronic, inflammatory disease of the gastrointestinal tract, which can progress with remission and flares. In order to maintain remission, initially; systemic glucocorticoids such as prednisolone are used. However, since these traditional glucocorticoids have too many side effects, second-generation drugs such as budesonide, which has much fewer systemic side effects, are now used. However, in the case we presented, a bilateral posterior subcapsular cataract developed in a Crohn's patient followed up with oral budesonide therapy. It was seen that there was no such case report in the literature.

Keywords: Budesonide, Crohn's disease, cataract

INTRODUCTION
Crohn's disease (CD) is a chronic, progressive, inflammatory disease involving any localization of the gastrointestinal tract. CD progresses with remissions and attacks. There are periods of remission and attacks in the natural course of this disease, so the aim of treatment is to achieve remission and then maintain it. Systemic glucocorticosteroids (GCs), such as prednisone, prednisolone, or cortisone, are an effective treatment for CD; however, they are associated with clinically important adverse events, such as suppression of the pituitary–adrenal axis, impaired glucose tolerance, cataracts, osteoporosis, hypertension, psychiatric disorders, gastrointestinal (GI) ulceration, infections, and other cushingoid symptoms. Therefore, GCs are associated with the treatment of active CD but are not recommended for long-term treatment (1-3). Budesonide is a second-generation GCs that binds to the intracellular GCs receptor with high affinity, exhibiting strong anti-inflammatory effects at the site of inflammation, allowing for local selective treatment of GI tract. Extensive (90%) systemic metabolism in the pre-small intestine and liver mucosa results in low systemic availability. By acting locally and minimizing systemic exposure, oral budesonide preparations offer broadly similar efficacy as systemic GCs but have a better safety profile (1-5). Meta-analyses based on these trials have shown that oral budesonide is more effective than mesalazine or placebo when used for induction of remission in mild to moderately active CD with no difference in side effects (6,7). A cataract is an opacity of the lens of the eye that may cause blurred or distorted vision, glare problems, or, in very advanced cases, blindness. Posterior subcapsular cataracts involve the area immediately anterior to the posterior capsule. They are acquired, in many cases, secondary to GCs therapy or ionizing radiation (8-10). In the literature review, no cataract development associated with oral budesonide has been reported, except for the case of a child with asthma who developed a cataract related to the use of inhaled budesonide therapy (11).

CASE
The presented case is an 18-year-old male patient. There were known previous tonsillectomy and adenoidectomy operations. In addition, there was a diagnosis of CD with ileal involvement, which was diagnosed 3 years ago. The patient applied to our gastroenterology outpatient clinic for follow-up. The patient complained of occasional

abdominal pain and sometimes dripping rectal bleeding. He also had a complaint of decreased visual acuity for several years. In the physical examination; His general condition was good, and his vitals were stable. In the physical examination; His general condition is good, his vitals are stable, body mass index (BMI) =19. In the systemic examination, there was mild gas distension in the abdomen, there was no evidence of defense or rebound in the abdomen, and external hemorrhoids were observed. Recent blood tests (complete blood count, blood biochemistry, stool, and urine tests) were normal. He was taking mesalazine 4000 mg/day orally and azathioprine 150 mg/day oral treatments. In the ileocolonoscopic examination performed 6 months ago, the disease was in remission. When the patient's archive files are examined; Three years ago, a diagnosis of CD with active ileal involvement was made and budesonide treatment was started. In the 11th week of budesonide treatment, the patient developed complaints of a sudden decrease in visual acuity and paleness in colors. No pathological features were found in neurological examination and cranial imaging (cranial magnetic resonance imaging and tomography). As a result of the requested ophthalmology department consultation; a bilateral posterior subcapsular cataract was diagnosed and, it was recommended to stop budesonide treatment and wear glasses. Surgical treatment was not considered, follow-up was recommended. After the budesonide treatment was stopped, the patient's visual acuity improved somewhat after a few months. The patient told us that his visual acuity improved relatively, but he needed to wear glasses.

DISCUSSION

In the presented case, bilateral posterior subcapsular cataracts occurred during budesonide treatment. No other disease or drug effect findings were found to explain this situation. In addition, visual acuity began to improve after budesonide treatment was discontinued. When the literature was reviewed, no cataract development was reported due to oral budesonide treatment.

GCs are still the most commonly used treatments to achieve remission in the active period of the CD. However, due to the dangerous side effects of traditional GCs, budesonide therapy, which has fewer systemic side effects, has been the first choice treatment to achieve remission. In 1994, a new formulation of GCs, budesonide, was shown to have efficacy equal to prednisolone, with 15 times greater affinity for GCs receptors. Budesonide has the added advantage of high first-pass hepatic metabolism and rapid elimination, resulting in minimal systemic absorption and thus reducing the risk of steroid-induced side effects (4,5).

In the literature, a pediatric patient who developed cataracts under the inhaled budesonide treatment given during an active asthma attack has been reported (11). The prevalence of posterior subcapsular cataracts in young patients receiving inhaled GCs for the treatment of chronic asthma is unknown. In a cross-sectional study, slit lamp examinations were performed on 95 consecutive young patients receiving inhaled beclomethasone or budesonide. No posterior subcapsular cataract was detected. This study suggests that routine screening for posterior subcapsular cataracts is not necessary for this patient population (12).

A steroid-induced cataract is a clinical diagnosis reserved for cases of cataract formation in relation to the dose and duration of GCs drug use. The diagnosis of cataracts is based on characteristic findings of opacity on comprehensive ophthalmic examination (10,13). Treatment for cataracts in children depends on the age of the child and its potential to interfere with vision development. If the cataract is visually significant, management requires the removal of the lens and optical/visual rehabilitation, which is critical to prevent amblyopia. Children with good vision, small opacities, or extra-axial opacities can be treated conservatively (14,15). Cataract was detected before the age of 18 in our patient. Our patient was approached conservatively for the treatment of cataracts, and visual acuity improved with the discontinuation of steroid treatment and the use of glasses, without the need for surgical treatment.

In a large study comparing Budesonide and placebo for achieving remission in CD patients. Discontinuation as a result of adverse events occurred in 8% of budesonide-treated patients and 10% of placebo-treated patients. Most adverse events leading to withdrawal were GI symptoms occurring at similar rates in both treatment groups. Non-GI symptoms leading to discontinuation in the budesonide group included single cases of erythema nodosum, rash, viral infection, chickenpox zoster, Cushing's syndrome, pharyngitis, unwanted pregnancy, and malignant brain neoplasm. Non-GI symptoms leading to withdrawal in the placebo group included three cases of Cushing's syndrome and a single case of alopecia, pruritus, acute urticaria, pulmonary abscess, unwanted pregnancy, arthritis, multiple sclerosis-like symptoms, and cholelithiasis, but no cataract was detected as an adverse effect (1). After achieving remission with induction therapy in CD, randomized trials of oral budesonide maintenance therapy showed only moderate benefit in terms of Crohn's Disease Activity Index (CDAI) scores and time to relapse, as confirmed in a recent Cochrane analysis. (10). Meta-analyses have shown that oral budesonide is more effective than mesalazine or placebo when used for induction of remission in mild to moderately active CD with no difference in side effects (3,6,7).On the other hand, budesonide is not recommended for maintenance treatment in CD in the European Crohn's and Colitis

Organization (ECCO) guidelines. Although budesonide-related side effects are rare when used at low doses and the safety profile is similar to a placebo, it is recommended that non-steroidal options such as thiopurines be preferred (15,16).

In this case report, cataract formation associated with budesonide in CD patients is presented. However, this case report cannot overshadow the low adverse effects of budesonide treatment compared to GCs. Budesonide should be the first choice GCs therapy to achieve remission in CD patients in the active phase, and patients should be closely monitored for side effects.

DECLARATIONS

Acknowledgment: Presented as a poster presentation at the 33th National Gastroenterology Week Congress (Poster number:159, 22-27 November 2016, Antalya).

Ethics Committee Approval Number: Not necessary.

Informed Consent: Informed consent was obtained from each patient included.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: Authors declare no conflict of interest.

Author Contributions: The authors contributed to the writing of this paper and approved the final version.

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