The Eurasia Proceedings of Science, Technology, Engineering & Mathematics (EPSTEM)
ISSN: 2602-3199

The Eurasia Proceedings of Science, Technology, Engineering & Mathematics (EPSTEM), 2020

Volume 11, Pages 146-149

IConTES 2020: International Conference on Technology, Engineering and Science

Diagnosis of Rheumatic Complications in Patients with Inflammatory Bowel Disease

Olena SULIMA
Dnipro City Hospital, Dnipro

Volodymyr SULYMA
SI Dnipropetrovsk Medical Academy of Ministry Health of Ukraine

Abstract: Investigation methods: X-ray: with a peripheral form without erosive changes; in 15% of patients, erosive changes in the metacarpophalangeal or metatarsophalangeal joints (asymmetry of arthritis). The study of synovial fluid: with a peripheral form, inflammatory in nature. Laboratory studies: increasing the concentration of inflammatory markers, thrombocytosis, anemia of chronic diseases. Diagnostic criteria; - the diagnosis of Ulcerative Colitis or Crohn Disease; - radiological signs of inflammation in the peripheral joints or sacroiliac joints or joints of the spine. Differential diagnosis: - Peripheral form: atypical course of rheumatoid arthritis, infectious arthritis, reactive arthritis; - Axial form: other spondyloarthropathies. Peripheral form: usually has an acute, migratory course; not symmetrical damage to the joints, arthritis of the knee and ankle joints is more often formed; there is no rheumatoid factor; as a rule, there are no erosions and deformations of the joints; most joint changes appear after a few years from the occurrence of inflammatory changes in the intestine. Types of peripheral joint lesions: 1 - oligosarticular (with lesions of ≤5 joints), acute course, can outstrip the appearance of changes in the intestine, usually disappears within 10 weeks, extraintestinal symptoms are often associated, e.g. erythema nodosum; 2 - multi-articular (> 5 joints), usually without connection with the debut of intestinal disease, chronic course (months, years), without extraintestinal symptoms other than uveitis; 3 - peripheral joint damage is combined with axial spondylitis. Axial form: in some patients there is no chronic inflammatory pain in the lower back, despite the presence of radiological changes typical for inflammation of the sacroiliac joints, while in others the characteristic clinical manifestations of spinal lesions occur without typical radiological changes. Changes in other organs associated with Ulcerative Colitis / Crohn Disease.

Keywords: Diagnostic, Rheumatic, Colitis , Crohn Disease.

Introduction

Crohn's disease (CD) (regional enteritis, granulomatous ileitis) is an inflammatory disease involving all layers of the intestinal wall in the process; characterized by intermittent (segmental) nature of the lesion of various sections of the gastrointestinal tract. It is characterized by diarrhea mixed with mucus and blood, abdominal pain (often in the right iliac region), weight loss, and fever. Ulcerative colitis (UC) (nonspecific ulcerative colitis, idiopathic colitis) is an ulcerative-destructive lesion of the mucous membrane of the colon, which is localized mainly in its distal parts. In the clinical picture are characteristic: bleeding from the rectum, rapid bowel movement, tenesmus; abdominal pain is less intense than with Crohn's disease, localized most often in the left iliac region. In approximately 30% of adolescent patients, ulcerative colitis begins suddenly with the appearance of abdominal pain and diarrhea mixed with blood. According to various authors, extraintestinal manifestations of inflammatory bowel diseases (IBD) are noted to 25% of cases. Their largest share is in total forms of ulcerative colitis (85%) and Crohn's disease involving the colon (30%) or large and small intestines (60%).
Systemic manifestations of IBD according to the pathogenetic principle are divided into three groups.

The first group includes manifestations arising as a result of systemic hypersensitivity, - damage to the joints, eyes, skin, oral mucosa; to the second - due to bacteremia and antigenemia in the portal system - damage to the

liver and biliary tract. There are also phenomena that develop a second time with long-term disorders in the colon, such as anemia, electrolyte disorders. The inflammatory process in the intestine causes a violation of intestinal permeability and the penetration of autoantibodies and circulating immune complexes from the intestinal lumen into the bloodstream. This causes a systemic immuno-inflammatory process with damage to the vessels, the synovial membrane of the joints and the ligamentous apparatus of the spine.(Mendoza J.L., et al, 2005). Peripheral arthritis in patients with UC and CD develops more often with widespread colon damage. As a rule, its manifestation falls on the first year from the onset of bowel disease. In 70% of cases, arthritis develops with an exacerbation of intestinal pathology, but sometimes its symptoms may precede the symptoms of the underlying disease, especially in patients with Crohn's disease. In UC, joint damage is observed in 20% of patients, in CD – to 10%. In 75% of cases, joint damage occurs in the form of peripheral arthritis, in 25% of spondylitis and sacroileitis.

With these intestinal pathologies, damage to the joints of the lower extremities is most characteristic. As a rule, there is an acute onset of the joint syndrome in the form of monoarthritis with damage to the knee or ankle joint on one side. After several days, symmetrically involved knee, ankle, shoulder, elbow joints. The defeat of small joints is less characteristic. In CD, joint syndrome can manifest itself with migratory arthralgia, as well as erosive arthritis and joint deformity. Sacroileitis is diagnosed in 25% of patients with UC and in 15% of patients with CD, usually symmetrical. (Bourikas L. A.,2009).

Crohn’s disease is associated with a type of rheumatologic disease known as seronegative spondyloarthropathy. This group of diseases is characterized by inflammation of one or more joints (arthritis) or muscle inserts (Enthesitis). Arthritis in Crohn's disease can be divided into two types. The first type affects the greater weight of the supporting joints, such as the knee (the most common), hips, shoulders, wrists, or elbows. The second type symmetrically includes five or more small joints of the arms and legs. Arthritis may also include the spine, leading to ankylosing spondylitis if the entire spine is involved, or simply sacroiliitis if only the sacroiliac joint is involved. Symptoms of arthritis include painful, warm, swollen, stiff joints, and loss of joint mobility or function.

Method

For diagnostic of rheumatic complications in patients with inflammatory bowel disease used:

Investigation methods:

X-ray: with a peripheral form without erosive changes; in 15% of patients, erosive changes in the metacarpophalangeal or metatarsophalangeal joints (asymmetry of arthritis). (Leclerc-Jacob S., et al, 2014).
The study of synovial fluid: with a peripheral form, inflammatory in nature.
Laboratory studies: increasing the concentration of inflammatory markers, thrombocytosis, anemia of chronic diseases.

Diagnostic criteria:

the diagnosis of Ulcerative Colitis or Crohn Disease;
radiological signs of inflammation in the peripheral joints or sacroiliac joints or joints of the spine.

Differential diagnosis:

Peripheral form: atypical course of rheumatoid arthritis, infectious arthritis, reactive arthritis;
Axial form: other spondyloarthropathies.

Peripheral form: usually has an acute, migratory course; not symmetrical damage to the joints, arthritis of the knee and ankle joints is more often formed; there is no rheumatoid factor; as a rule, there are no erosions and deformations of the joints; most joint changes appear after a few years from the occurrence of inflammatory changes in the intestine.

Types of peripheral joint lesions:

1 -oligosarticular (with lesions of ≤5 joints), acute course, can outstrip the appearance of changes in the intestine, usually disappears within 10 weeks, extraintestinal symptoms are often associated, e.g. erythema nodosum;
2 - multi-articular (> 5 joints), usually without connection with the debut of intestinal disease, chronic course (months, years), without extraintestinal symptoms other than uveitis;
3 - peripheral joint damage is combined with axial spondylitis.

Axial form: in some patients there is no chronic inflammatory pain in the lower back, despite the presence of radiological changes typical for inflammation of the sacroiliac joints, while in others the characteristic clinical manifestations of spinal lesions occur without typical radiological changes.

Changes in other organs associated with Ulcerative Colitis / Crohn Disease.

Peripheral arthritis usually affects the large joints of the hands and feet, including the elbows, wrists, knees and ankles. The pain can "migrate" from one joint to another and last from several days to several weeks. The more intense the inflammatory process in the colon, the more pronounced arthritis. To date, there are no specific tests to confirm UC - associated arthritis. This diagnosis can only be made by excluding other causes of joint pain. Fortunately, such peripheral arthritis usually does not cause a significant change in joint function. (Orchard T. R., et al, 2009).

Spondylitis (arthritis of the intervertebral joints) causes pain and stiffness in the lower part of the spine and sacroiliac joints. In young people, these symptoms can appear much earlier than intestinal manifestations. Unlike peripheral arthritis, spondylitis can lead to a significant deterioration in spinal function, as the volume of movement in the intervertebral joints decreases. Spondylitis usually appears around the age of 35. (Sulyma V., Sulima O., 2019; Sulima O., Sulyma V., 2020).

Results and Discussion

X-ray signs of sacroileitis observed in 20-50% of patients with UC and CD, but progressive ankylosing spondylitis observed only in 1-10% of patients. MRI can detect in patients with appropriate symptoms early sacroiliitis without the presence of radiographic signs of SPA. When conducting differential diagnostics, it is necessary to exclude any deformations and osteoarthritis, osteoarthritis, rheumatoid arthritis, connective tissue diseases. IBD-associated peripheral arthritis should be differentiated from arthralgia (which may be complicated by the abolition of corticosteroid therapy), osteonecrosis, lupus syndrome.

Peripheral arthritis in IBD is usually asymmetric and oligoarticular. Them the onset may precede intestinal symptoms, although they usually coincide or appear after the onset of IBD. Overall forecast peripheral arthritis is favorable if not take into account the tendency to chronicity and the formation of erosion in a small number of patients. Forecast axial arthropathy is less favorable and is associated with the prognosis of AS, and not with the activity of IBD. (Hindorf U., et al, 2009).

Classical AS is a progressive pathological condition with structural damage, disability, a negative impact on the quality of life of patients. It is important to timely identify, with signs of active inflammation on MRI, early non-radiological axial SpA in order to try to prevent its progression to radiographic axial SpA, which is observed in 10–20% of patients within 2 years with increased C-reactive protein.

Conclusion

Diagnosis of extraintestinal manifestations of Crohn's disease and Ulcerative colitis still requires significant efforts by a rheumatologist and proctologist to effectively treat patients with these problems.

Recommendations

It is recommended to use the available data in the diagnostic program in patients with rheumatologically complications in inflammatory bowel diseases.

Acknowledgements or Notes

Thank you very much to the staff of the Dnipro City hospital and SI "Dnipropetrovsk Medical Academy of Ministry Health of Ukraine", Dnipro, Ukraine.

References

Bourikas, L. A., & Papadakis, K. A. (2009). Musculoskeletal manifestations of inflammatory bowel disease. *Inflam Bowel Dis, 15*, 1915-24.

Hindorf, U., Johansson, M., Eriksson, A., et al .(2009). Mercaptopurine treatment should be considered in azathioprine intolerant patients with inflammatory bowel disease. *Aliment Pharmacol Ther, 29*, 654-61.

Leclerc-Jacob, S., Lux, G., Rat, A.C., et al .(2014). The prevalence of inflammatory sacroiliitis assessed on magnetic Resonance imaging of inflammatory bowel disease: a retrospective study performed on 186 patients. *Aliment Pharmacol Ther, 39*, 957-62.

Mendoza, J.L., Lana, R., Taxonera, C., et al. (2005). Extraintestinal manifestations in inflammatory bowel disease: differences between Crohn's disease and ulcerative colitis. *Med Clin (Barc), 125*, 297-300.

Orchard T. R., Holt H., Bradbury L., et al. (2009). The prevalence, clinical features and association of HLA-B27 in sacroiliitis associated with established Crohn's disease. *Aliment Pharmacol Ther, 29*,193-7.

Sulima, O., & Sulyma, V. (2020). The frequency of joints manifestations of inflammatory bowel disease in the practice of a rheumatologist. *Abstracts Falk Symposium 218*, Mexico. – P.33.

Sulyma, V., & Sulima, O. (2019). The complexity of treatment tactics in patients with severe ulcerative colitis in the presence of extraintestinal manifestations of the joints. *Abstracts Falk Symposium 214*, Oxford. – P. 81.

Author Information

Olena Sulima
Dnipro City Hospital
Dnipro, Ukraine
Contact e-mail: *olenasulima2@gmail.com*

Volodymyr Sulyma
SI "Dnipropetrovsk Medical Academy Ministry Health of Ukraine"
V. Vernadskyj Street, 9, Dnipro, Ukraine