FREE PERITONEAL PERFORATION IN CROHN`S DISEASE- A RARE COMPLICATION

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Abstract. Free peritoneal perforation is a rare complication of Crohn’s disease. We report the case of a 17 years-old male patient with ileocolonic and perianal Crohn’s Disease, severe ileitis nonresponsive to anti-TNF alfa medication, who underwent laparotomy surgery for acute abdomen and was found to have ileal perforation for which segmental enterectomy with ileotransversoanastomosis was performed. The most likely hypothesis is a bowel dilatation above a stenotic area which increased the intraluminal pressure or the inflammatory changes in the blood vessels associated with enteritis possibly contributing to an ischemic cause. Due to high risk of postoperative recurrence of the disease, anti-TNF alfa therapy was restarted at the same dose at 1 month after surgery. The patient had good early and late postoperative outcomes.

Keywords: Crohn’s Disease, Intestinal perforation, Complication of Crohn’s Disease, Segmental enterectomy

Clinical presentation

We report the case of a 17 years-old male, urban citizen, non-smoker, without any family history of IBD. He first presented to a medical unit in 2007, complaining of diarrhoea lasting for 8 weeks (4-5 loose stools/day, without blood/mucus/pus). He associated cramps abdominal pain, nausea and weight loss.

The physical examination showed an underweighted patient, with a mild discomfort on palpation of the right abdominal flank.

The laboratory data returned with a mild inflammatory syndrome and mild anaemia.

The ileocolonoscopy performed described multiple superficial linear ulcers in the terminal ileum, some of them deeper and confluent, with a discontinuous involvement of the mucosa. The rectum and colon had normal appearance excepting few pseudopolyps in the cecum and the ascending colon (fig 1,2).

The histopathology report described focal chronic active inflammation (lymphocytes and plasma cells) and segmental crypt architectural distortion.
Having all the clinic-biological, endoscopic and histological data, the final diagnosis of Crohn’s disease was established, classified as A2L3B1 according to Montreal classification (age at onset: 17-40 y, ileocolonic extension, non-stricturing and non-fistulising pattern), a mild flare of disease according to CDAI clinical score (CDAI 190).

The patient started treatment with oral 5-ASA (4g/day) and topical corticoid (Budesonis 9 mg/day) which succeeded to maintain clinical remission for only one year, when he presents with a moderate flare of disease, necessitating systemic administration of glucocorticoids. He was corticoid-responsive, but the treatment for maintaining remission was also adjusted with ADD-on of Azathioprine 2.5 mg/kgc.

He had an undulating course of the disease, with frequent relapses during the following years, associating involvement of the perianal region (lower intersphincteric perianal fistula, perianal abscesses).

Given the multiple poor predictors he cumulated (young age at diagnosis, ileocolonic and Perianal disease, moderate relapses while on AZA — maintenance ) the medical decision was to optimize the treatment with an anti-TNF alfa agent (Infliximab 5 mg/kgc).

After an initial good response to treatment, with visible improvement of the endoscopical lesions (fig 3) and clinical activity, the disease started to relapse more severely (at approximately 1 year after starting IFX): circumferential ulcerations of the ileocecal valve, severe ulcerations in the distal ileum and partial stenosis of the lumen (fig 4).

Before any other treatment optimization was made the patient presented to the emergency department unit with signs of acute abdomen.

The laparotomy found free perforation of the distal ileum with acute peritonitis, for which a segmental enterectomy with ileotransversoanastomosis was performed. The histological interpretation of the surgical specimen described transmural chronic inflammation and lymphoid aggregates, findings confirming a diagnosis of Crohn’s disease.

Even if the main inflammatory trigger was surgically removed (severe terminal ileitis, unresponsive to medical treatment), the patient still associated multiple predictors of early recurrence after ileocolonic resection (penetrating disease behaviour, perianal involvement, young age at onset, short duration of the disease). Having these arguments, the patient was restarted on IFX 5 mg/kgc 1 month after surgery, which was well-tolerated and successfully maintained remission in the following years.

**Discussions**

The case-particularity is given by the free peritoneal perforation, which is a rare condition in IBD (~ 100 cases reported in the literature, 1-3 % of patients with CD). [1] It is so rare because CD is usually associated with a fibrous reaction and adherence to adjacent organs, so the omentum usually encapsulates the imminent perforation site creating an inflammatory mass. Only 20 % of ileal perforations associate pneumoperitoneum. [2]

Most of the perforations develop in the ileum, due to the thinner wall compared to the jejunum. [3]

The mechanism of free peritoneal perforation in IBD is not fully understood, but some possible explanations are suggested: a bowel dilatation above a stenotic area with increases intraluminal pressure or the inflammatory changes in the blood vessels associated with enteritis possibly contributing to an ischemic cause. Both of these may be incriminated in the presented case. [1]

**References**


CLINICAL EVOLUTIVE ASPECTS AND NEUROIMAGING FINDINGS IN A CHILD WITH HERPES SIMPLEX VIRUS TYPE I ENCEPHALITIS

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Abstract. Herpes simplex encephalitis (HSE) is a severe viral infection of the central nervous system and it’s one of the most common causes of life-threatening fulminate necrotizing viral encephalitis. Most frequently the patients’ presentation is a non-specific one, consisting of fever, headaches, vomiting, focal neurological signs, and seizures in association with an altered consciousness. The management of HSE has been improved in the last years through the availability of intravenous acyclovir therapy and PCR - based diagnostic assays, reducing mortality and morbidity rates and decreasing rates of neurological sequelae. The objective was to expose clinical data, laboratory test sequencing and management courses in HSE among children - a clinical case report. We present the case of a 15 month-old boy, admitted in the ICU of National Institute for Infectious diseases “Prof. Dr. Matei Bals” for fever, vomiting, diarrhoea, focal and generalized seizures, drowsiness, bulging anterior fontanel and altered mental status. The diagnosis of HSE was established corroborating data from the clinical findings with the neurological exam, and confirmed by detecting the HSV type I DNA in CSF using PCR; Brain MRI was highly suggestive for HSE. The patient was treated with i.v Acyclovir; anticonvulsant drugs , anti cerebral-edema therapy and i.v human immunoglobulin. The child was discharged after 25 days with a good clinical and neurological condition. HSE is the most common cause of sporadic fatal encephalitis worldwide and it’s a medical emergency that requires etiological treatment right away. Using PCR for detecting HSV -DNA from CSF remains the gold standard for diagnosing HSE. Mortality rates range dramatically depending on how early the antiviral treatment is initiated.

Keywords: herpes simplex type 1 encephalitis, polymerase chain reaction (PCR), cerebrospinal fluid , antiviral therapy

Introduction

Herpes simplex encephalitis (HSE) is a severe viral infection of the central nervous system and is the most common cause of life-threatening necrotizing viral encephalitis. Herpes simplex virus spreads to the brain by means of direct neuronal transmission from a peripheral site to the brain via the olfactory or trigeminal nerve. The exact pathogenesis and the precipitating factors or the predisposing underlying conditions are still unclear. [5]

The clinical presentation is non-specific consisting of fever, headaches, vomiting, focal neurological signs, seizures and altered level of consciousness. The etiologic diagnosis is established using rapid polymerase chain reaction (PCR) on cerebrospinal fluid (CSF) samples, although the combination of the clinical findings, CSF demonstrating pleocytosis with normal or elevated protein levels , specific brain MRI changes and diffuse abnormal electroencephalogram pattern with focal epileptic discharges.[2] It is known that herpes simplex virus has a high affinity for limbic system, insular cortex, medial temporal lobes, and inferolateral frontal lobes, affecting these areas bilaterally but presenting with asymmetrical involvement.[3]

HSE management has been improved in the last years through the availability of i.v. acyclovir therapy and PCR - based diagnostic assays, reducing mortality from 80% to 20%, significantly decreasing morbidity rates and subsequent neurologic sequelae. [6] Untreated HSE is a progressive and fatal condition in 70% of the cases in 7-14 days from onset.

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Clinical case

We present the case of a 15 month-old boy, admitted in ICU of National Institute for Infectious diseases “Prof. Dr. Matei Bals” for fever, vomiting, diarrhoea, focal and generalized seizures, drowsiness, bulging fontanel and altered mental status. The symptoms’ onset occurred 7 days before the patient admission with high fever (40 ºC), diarrhoea and vomiting. The child was initially admitted in a regional paediatric facility where he received empiric antibiotic therapy, i.v. fluids and antipyretics with initial unfavourable clinical evolution. Latter on he experienced repeated vomiting, irritability and drowsiness, high fever, axial hypotonia and focal seizures and he was consequently transferred to our clinic, The National Institute for Infectious diseases “Prof. Dr. Matei Bals”.

On admission the clinical examination revealed: a 15 month old boy, well nourished, with mediocre general condition, running a fever of 39,7 ºC; presenting with pale skin; no abnormal respiratory sounds were noted over the lungs area, cardiac rhythm was regular, no extra-beats or murmurs were identified during the initial evaluation; heart rate - 120-130 beats/min, blood pressure - 95/52 mmHg; no cyanosis was noted; oxygen saturation measured by pulse oximetry was 98% in room atmosphere, the abdominal exam found a symmetric, soft and non tender abdomen, no hepatosplenomegaly was discovered; physiological diuresis was present, the neurological examination describes a normotensive fontanelle, drowsiness, axial hypotonia, no focal neurological signs. In the first hours after admission the child experienced recurrent focal seizures with rapid neurological deterioration, bulging fontanel and decreased level of consciousness (GCS 5/15).

The initial brain MRI studies revealed diffuse enhancement of hippocampus and parahippocampal gyrus, anterior inferior temporal lobe, insular cortices, internal occipital lobe and parieto-occipital lobe in left brain hemisphere and parahippocampal gyrus and intern occipital lobe in right brain hemisphere; small foci of signal loss representing hemosiderin deposition in affected areas (Fig 1, 2, 3).

Fig.1. Transverse brain MRI section
Fig.2. Transverse brain MRI section (hyposignal T1 FLAIR hippocampus and parahippocampal gyrus, anterior inferior temporal lobe in left hemisphere and parahippocampal gyrus in right hemisphere)

The electroencephalogram (EEG) showed abnormal brain electrical activity: diffuse high amplitude slow-wave background activity without definite epileptiform discharges.

Serological tests using enzyme-linked immunosorbent assay (ELISA) came back positive for Herpes simplex Virus for the acute (Ig M) antibody subclass. Lumbar puncture was performed and revealed clear CSF, hypertensive, pleocytosis with predominance of lymphocytes and elevated protein; PCR assay for HSV type 1 was positive in CSF.

He was treated with i.v. Acyclovir for 24 day, anticonvulsant drugs in order to control seizures (Phenytoin and Levetiracetam), anti cerebral-oedema measures were implied - consisting of intravenous 20% mannitol and pulse steroid therapy with Methylprednisolone was initiate and was followed by a Dexamethasone regimen in a tapering down doses protocol, i.v human non- specific immunoglobulin were administered.

The clinical and neurological evolution was good with the rapid recovery of consciousness and complete seizure control during the first 48 hours after admission, with progressive improvement in the ability to perform fine/ gross motor skills and without sensory...
impairment. The child was discharged after 25 days in good condition even though subsequent brain MRI re-evaluation showed cystic encephalomalacia in affected areas (Fig 4,5).

It was hard to predict whether the over crossed life-threatening condition would affect his cognitive and language development. In these cases careful and long term follow-up is required in order to identify the late effects on the patient’s cognitive or affective development and consequently guide the speech and the occupational therapies.

**Discussions**

Herpes simplex encephalitis (HSE) remains one of the most devastating infections of the central nervous system with severe sequelae and long term consequences, despite available antiviral therapy. It is highly recommended to initiate optimal antiviral therapy in front of a suspected HSE in a paediatric patient, pending confirmation of the diagnosis since acyclovir, the drug of choice, is relatively nontoxic and because the prognosis of untreated herpetic encephalitis is poor.[5]

The diagnosis should be established as soon as possible after the symptoms’ onset in order to obtain good clinical progressions, with reduced mortality and morbidity. Even with early administration of therapy after the onset of disease, nearly 60-70 % of survivors will have significant neurological deficits.[1, 4]

Pulse steroid therapy with Methylprednisolone may be beneficial in HSE, particularly in reducing the consciousness disturbance and in improving the neurological deficits. High doses of Methylprednisolone i.v. may improve the cerebral oedema and regulate the host immune response. The combination therapy using both acyclovir and pulse corticosteroids therapy can achieve a better outcome in patients with HSE.

**Conclusions**

- Herpes simplex encephalitis is the most common cause of sporadic fatal encephalitis worldwide and it is a medical emergency that requires urgent etiological treatment.
- PCR for detecting HSV DNA from CSF remains the gold standard in the diagnosis of HSE
- Early initiation of antiviral therapy with i.v. Acyclovir improves the clinical and neurological outcomes
- Pulse steroid therapy in conjunction with antiviral therapy could achieve a better prognosis for children with HSE.
- Mortality ranges dramatically depending on how early treatment is implied.

**References**

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