

Cerebellar Abscess of Otogenic Origin in a Case

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Abstract

Cerebellar abscess of otogenic origin is the consequence of an untreated or insufficiently treated ear infection. Currently we are observing a decrease in incidence and a good evolution is thanks to progress in imaging but also new generations of antibiotics. However, complications are rare but serious. We report the case of a 60-year-old female patient, a housewife with a history of chronic otitis media. Over a period of 19 days, she presented with ear pain, swelling and purulent discharge from the left ear, associated with left cerebellar syndrome and intracranial hypertension syndrome. The brain scan without and with contrast product injection revealed a rounded image and triventricular hydrocephalus. Pus culture was negative. We observed an improvement in the signs after antibiotic therapy followed by drainage of the abscesses.

Keywords

Abscess, Cerebellar, Otogenic, Rare, Serious

1. Introduction

Cerebellar abscess is a rare and serious infection; loco regional infections represent the first of the etiologies, mainly those of origin octogenic in 37% to 93% of cases (Che-Wei et al., 2011; Shaw & Russell, 1975). Generally speaking, its frequency has decreased considerably, however, it remains recurrent in developing countries due to unfavorable socio-economic conditions (Abada et al., 2008). The cerebellar extension of the infection occurs mainly by contiguity (Bradley et al., 1984). The symptomatology varies depending on the size and topography; it can include an infectious syndrome, a cerebellar syndrome or an intracranial hypertension syndrome (Page et al., 2005). The management of cerebellar abscess is medico-surgical, and must be associated with treatment of the portal of entry to avoid recurrences (Sennaroglu & Sozeri, 2000). The prognosis of cerebellar abscess and otogenic infections has been revolutionized by progress in imaging and the arrival of new broad-spectrum antibiotics (Abada et al., 2008; Basant, 2011). To our knowledge, no case of cerebellar abscess has been reported in Guinea.

2. Observation

This is a 60-year-old female patient, a housewife, admitted to the neurology department for headaches, drowsiness, left ear pain and a gait disorder. Everything has been evolving for nineteen days.

The patient gradually developed headaches, left ear pain, dizziness, fever and tinnitus over a period of two weeks. Faced with these signs, the patient went to the otolaryngology department where the diagnosis of malignant suppurative otitis was made. Medical-surgical treatment was proposed including a prescription for amoxicillin/clavulanic acid (1 g/125 mg) and paracetamol 1 g. The pre-operative assessment consisted of a cardiological consultation which did not reveal any particularity, a blood test which had the particularity of a non-specific inflammatory syndrome (THb = 10.1 g/dl; VS: 1st min = 25.2 nd min = 40; CRP = (+) 15; leukocytes = 11.6 Giga/l; neutrophil = 9.4 Giga/l).

The cytological analysis of the ear sample revealed an aspect corresponding to the inflammatory tissue with an atypical cellular modification, the CT scan of the rock concluded with a scannographic appearance in favor of a left external malignant otitis with peri-auricular extension and towards the temporomandibular joint (**Figure 1**).

Five days later, given the clinical worsening marked by difficulty walking, vomiting then drowsiness, the patient consulted the neurology department of Ignace DEEN hospital via the emergency room.

She had a history of otitis media which had been ongoing for 2 years.

The neurological examination revealed a hypertension syndrome.

Intracranial syndrome causes drowsiness, headaches and vomiting, but also a cerebellar syndrome composed of dizziness, gait ataxia and left hypermetria.

On locoregional examination, swelling of the left ear was noted with suppurative discharge and pain on palpation of the ipsilateral stragus.

We performed a brain scan without injection of the contrast product, revealing hydrocephalus (**Figure 2**) and non-systematized hypodensity in the left cerebellar hemisphere. The CT scan with contrast product injection revealed a rounded image in the left cerebellar hemisphere (**Figure 3**) suggesting a cerebellar abscess to be differentiated from a cerebellar tumor.

She benefited from treatment with ceftriaxone 2 g \times 3/day, metronidazole 500 mg \times 2/day. Drainage of the cerebellar abscess was carried out three days after hospitalization, and that of the ear one week later. The cytobacteriological analysis of the pus did not reveal any germs. The evolution was followed by a clinical improvement except for the dizziness, the control brain scan showed a regression of the hydrocephalus.



Figure 1. A left external malignant otitis with peri-auricular extension and towards the temporomandibular joint.



Figure 2. Triventricular hydrocephalus.



Figure 3. A roundel image located in the left cerebellar hemisphere.

3. Discussion

Otogenic infections represent a predisposition to cerebellar abscess, in a series reported by Aldakhail AA, all brain abscesses were otogenic (Aldakhail, 2006). No predominance of sex has been established, however children and adults young people are the most affected. Chronic otitis media progresses to brain abscess over a period of one month at twenty (Ndoye et al., 2007; Srinivasan et al.,

1999). This duration was 2 years for our patient. Our patient presented with fever, ear and cerebellar signs; a review of the literature allowed us to note that these signs are almost constant in cerebellar abscesses of octogenic origin (Bradley et al., 1984; Dwaipayan et al., 2016; Srinivasan et al., 1999). The brain scan allowed the diagnosis but also the post-operative follow-up which made it possible to observe a regression of the hydrocephalus. With a sensitivity of 90% to 100%, CT scanning is, according to several authors, the best tool for diagnosing and monitoring the treatment of abscesses cerebral (Dwaipayan et al., 2016; Hilmani et al., 2009).

Otogenic brain abscesses are preferentially located in the temporal lobe and the cerebellum. The frequencies vary according to the authors (Aldakhail, 2006; Deric et al., 1998; Sennaroglu & Sozeri, 2000). Nunez DA et al concluded that brain abscesses develop less in the temporal lobe than in the cerebellum, however another study reported 69% of temporal abscesses compared to only 31% of cerebellar abscesses (Aldakhail, 2006; Nunez & Browning, 1990). The blood test carried out revealed a predominantly neutrophilic leukocytosis, which points to a bacterial infection.

The main bacteria involved in octogenous abscesses are streptococci pneumoniae, staphylococci pyogene, and H infuenzae (Mauricio et al., 2005). The negative culture observed in our patient is also reported in the literature; previous antibiotic therapy could be the cause of this result. The treatment is medico-surgical, however no consensus is established. Studies have shown the effectiveness of medical treatment alone for multiple, deep or small abscesses (Sommer et al., 1998; Tattevin et al., 2003). It is based on double or triple antibiotic therapy, adapted according to the germ (Newlands, 1965).

Surgical treatment allows a certain diagnosis, reduces pressure intracranial, and improves antibiotic therapy and prognosis (Tourret & Yeni, 2003). Its efficiency is 80% to 90%, mortality is almost zero and its morbidity is 15% (Tonon et al., 2006).

4. Conclusion

Octogenous cerebellar abscess is an infection whose frequency has decreased since the advent of new classes of antibiotics. The risk of serious complications is high. The prognosis is favorable when treatment is early and adequate, although no consensus has been established.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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