

Localized Tetanus Of The Pelvis Limbs With A Teenager In Brazzaville-Congo

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Abstract:

Tetanus remains a public health issue in SubSharan Africa. With the child, the acute, generalized form is the most common one, but there are clinical variants. We are reporting here a case of localized tetanus of the limbs involving a 16 year old teenager that appeared following an intramuscular injection of quinine that was carried out in a non registered surgery. The evolution was favourable during the treatment. We are emphasizing systematic prevention by means of vaccination, but also a rigorous respect of asepsy rules. The improvement of the populations' socio-economic and cultural conditions constitute another prevention axis.

Keywords: localized tetanus; pelvis limbs; teenager; Brazzaville.

Introduction

Tetanus is a non contagious, immunizing toxi-infection that results from the *Clostridium tetani*. Having become exceptional in the West[1], it remains a public health issue in Africa [2,3].. WHO reports 700,000 to 1000,000 cases per year (in 2002) with 213,000 deaths after a 5 year period, and 198,000 deaths before a 5 year period [4]. In Congo cases of tetanus are still being reported as a recent paediatric study reveals [2]. As far as the child is concerned, acute generalized tetanus is the most well-known clinical type[2,5]. In this article we are reporting a case of localized tetanus of the pelvis members involving a 16 year old teenager that appeared during an intramuscular injection of quinine.

Medical observation

Duveil, a 16 year old teenager, was admitted in the intensive paediatrics care unit (SIP) of Brazzaville Teaching Hospital in July 2017 under suspicion of tetanus. Two weeks prior to his hospitalization, he suffered from fever and arthromyalgias that were treated as malaria attack following a quick diagnosis test in a non registered surgery. The treatment consisted of 25mg/kg/per day of quinine in two intramuscular injections for three days. An apyrexia was achieved as well as the disappearance of the arthromyalgias. Four days afterwards, spasms and painful cramps of the left pelvis limb appeared. These led to his being admitted in a district hospital where the hypothesis of tetanus was put forward, and the treatment that was administered consisted of aliphatic and pipéridinées phénothiazines, benzodiazépines, and a myorelaxant whose direction of use were not made clear. The intensification of the spasms and cramps, and the fact that the pelvis contralateral limb was affected after four days of hospitalization accounted for his being transferred to Brazzaville Teaching Hospital, that is a Hospital of reference.

Dieuveil had been administered two doses of antitetanus vaccine before he was 6 months old but without a booster. He is a fifth form pupil and since he was five, he was enrolled in a football school. His 38 year old father is a mason whereas his 32 year old mother is unemployed. Both of them attended primary school.

He had a clear conscience on the day of his admission with well-coloured mucus membranes, a 37°C temperature, a 90 beats/minute cardiac frequency, and a respiratory frequency of 16 cycles per minute. He weighed 52kg, and was 1.62m tall. The weight-age ratio amounted to 1 Z score, the height-age one amounted to 0 Z score, and the body mass index was 16cm² which corresponds to 1 Z score hence an eutrophic.

The pelvis limbs were stretched out. One could note painful invincible cramps, tonico-clonic spasms, at the rate of three episodes per hour, that were spontaneous or caused by stimuli. The osteo-tendon reflexes were lively and symmetrical. No trismus, sardonic features were observed. The remaining aspect of the test was normal. The Dakar stage II diagnosis of the localized tetanus of pelvis limbs was used[ref]. The teenager was placed in a moderately lit room with a treatment consisting of diazepam 3 mg/kg/day in continuous drip, subcutaneous heterologous 1500 UI antitetanus serum, intramuscular antitetanus 1500 UI vaccine, metronidazole 30 mg/kg in drip, and the amoxicillin-clavulanic acid 80mg/kg/day association. At the same time oral feeding was continued. On the 10th day of hospitalization the end of spasms and cramps was observed but one could note the stiffness of both ankles. He was to come out of hospital on the 14th day. Limbs functional re-education was advised as well as a vaccination booster programme.

Discussion

This observation involving an insufficiently vaccinated child can be said to be remarkable, the localized nature of the

symptoms, its entrance door : an intramuscular injection of quinine, the relative easiness of the of the diagnosis and the favourable evolution.

In the industrialized countries in which the effect of tetanus has become very weak, tetanus constitutes a rare event[1]. It was mainly observed among subjects with a softened antitetanus immunity owing to their old age and previous vaccination[6]. In developing countries however, it remains a public health issue [2,3,5]. a review of reported cases by different teams reveals the variability of the observed clinical manifestations.[2,3,5,6]. With the child the acute generalized tetanus is the most well-known form[ref], but there are variants of the typical form notably the localized forms among which we may cite those related to the head, abdomen, and the localized tetanus of the limbs [7,8]. The African literature review reports 64 cases of localized tetanus among which 19 were published by a Senegalese team [7], and consisting in 11 cases of head tetanus, and eight cases of localized tetanus of the limbs. Tetanus represented 0,83% of all tetanus. In Ivory Coast [8], 45 were reported out of 2746 cases of tetanus, hence two localized tetanus per year versus 123 regarding the generalizd forms.

It is supposed that localized tetanus is observed when blood anatoxine caused by vaccination or owing to serotherapy is sufficient to inactivate the circulating toxine and oppose the generalization of the cramps, but insufficient to neutralize the toxine that has been accumulated at the entrance door[8,9]. Although it is rare, localized tetanus of the limbs constitutes the most observed clinical form of localized tetanus according to Kakou [8]: 71% of the cases followed by the head form, 25%, then the abdominal one 2%.

In Congo tetanus is often generalized; no localized form has been reported[2]. But because of the usual delay at consultation, some forms that were

initially localized may be seen at the generalized stage. Localized tetanus can be observed with all age, preferably with the young subject[8] like in this clinical case. Dealing with the localized tetanus of the limbs, after a long period of incubation, 14 days on average, the painful cramps remain localized near by the entrance door, causing the pelvis limb to stretch out. But it is possible for the controlateral limb to be affected afterward like in this clinical case with a risk of secondary generalization [7,8]. According to Kakou, this risk seems higher in the case of head tetanus(73%) than in case of abdominal tetanus (50%), or limb tetatnus(12%)[8]. There is a relationship between the entrance door and the localization of the tetanus. Thus the cranium-facial wounds are more responsible for a head tetanus, the entrance door resulting from an intramuscular injection and the wounds of the pelvis limbs cause limbs tetanus as in the case of Dieuveil [7,8].

In this observation the entrance door was an intramuscular injection that was made in a non registered surgery. ABA T et al have reported in their series 40% of entrance door attributable to intramuscular injections of quinine regarding children that have been admitted in hospital for localized tetanus[3]. Kakou et al report 15/32 cases of intramuscular injection of quinine with patients that have been hospitalaized for a localized tetanus of the limbs[8]. The onset of tetanus following an intramuscular injection of quinine testifies the dysfunction of the health facilities, the practice of intramuscular injection of quinine having been abandoned for, in addition to the onset of tetanus relating to bad asepsy conditions, they generate paralysis by affecting the sciatic nerve[10, 11]

On a diagnosis point of view, certain clinical variants may result in a misleading diagnosis in non expert hands. Thus, if the diagnosis was easy in this case, localized tetanus of the limbs may feign a pyramidal syndrom [Kakou AR et al], and

abdominal tetanus a surgery urgency [8,9]. The evolution of the localized tetanus of the limbs is very often favourable. Complications such as joint stiffness that have been reported by Kakou et al, generally of a later favourable evolution [8] have been noted in this clinical case. The duration of hospitalization - 14 days for this clinical case, is similar to the average duration that Kakou has reported regarding localized forms of tetanus [8].

Conclusion

To the best of our knowledge this is the first observation of localized tetanus of the limbs involving a relatively little vaccinated teenager. Nowadays an increase in the frequency of tetanus in the child can be observed, which testifies a failure of the vaccination system. Although rare, localized tetanus of the limbs is a classical misleading form. The localized cramps and spasms of the limbs without an obvious clinical explanation must not delay the diagnosis. The entrance door is to be looked for in the neighbourhood of the spasms.

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