CASE REPORT

Sporotrichosis in pregnancy: case reports of 5 patients in a zoonotic epidemic in Rio de Janeiro, Brazil

Esporotricose na gestação: relato de cinco casos numa epidemia zoonótica no Rio de Janeiro, Brasil

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Abstract: Five cases of sporotrichosis occurring in pregnant women in a zoonotic epidemic in Rio de Janeiro, Brazil, are described. The main clinical features, as well as the challenging therapeutic choices for this specific group of patients, are discussed.
Keywords: Amphotericin B; Pregnant women; Sporotrichosis; Therapeutics; Treatment outcome

Resumo: Os autores apresentam cinco casos de esporotricose em gestantes numa epidemia zoonótica no Rio de Janeiro. São discutidos principalmente os aspectos clínicos e as dificuldades na escolha terapêutica desse grupo específico de pacientes.
Palavras-chave: Anfotericina B; Esporotricose; Gestantes; Resultado de tratamento; Terapêutica

INTRODUCTION

Sporotrichosis has always been regarded as an occupational disease with a strong rural profile. Nevertheless, since 1997 the city of Rio de Janeiro has been experiencing an epidemic of zoonotic transmission by felines, considered rare in other parts of the world and that had a previous rate of circa one case/year. Marques and cols.[1] published a report, in 1998, about two feline transmission cases observed in a couple living in a rural area of the interior of the state of São Paulo. A wide diversity of clinical presentations has been observed, including the extracutaneous forms, uncommon before the outbreak of this epidemic in 1997. Some risk groups, such as elderly patients, those infected with AIDS or other comorbidities evolve with severe clinical manifestations, oftentimes fatal. Women, who usually take care of domestic animals, are more susceptible to the infection. We report the occurrence of five clinical cases of this mycosis in pregnant women, analyzing its clinical and serological aspects, as well as the difficulty faced when making a therapy choice.

CASE REPORTS

During the period from 1997 to 2009, 171 cases of sporotrichosis were diagnosed in the University Hospital Pedro Ernesto, RJ, five of them in pregnant women. Four of these patients reported contact with a sick animal (cat) and one of them with an apparently healthy cat. One of the patients was a veterinarian and contracted the disease when professionally caring

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for the animal. She began the treatment by taking terbinafine and found out she was pregnant while using oral terbinafine. Delivery was normal after a full-term pregnancy. Gestational age varied from 3 to 24 weeks and the mean age of these patients was 29.2 years, with a predominance of 80% of the lymphocutaneous form; none of them had any sign of systemic disease, except for polyarthritis diagnosed as reactive arthritis (Figure 1). The diagnoses of all cases were confirmed by isolation of *S. schenckii* from the cutaneous lesion. Serological tests were also carried out according to methodology described by Bernardes-Engemann and col. that consists in detection of IgG antibodies against the antigen *Ss*CBF, isolated from the *S. Schenckii* cell wall.[2] The highest titers were found in the patient with more extensive clinical manifestations; in the others the titers were lower. There was one false-negative titer. Three patients were treated with systemic antifungal medication and two only with thermotherapy, a conservative treatment (Figures 2 and 3). All of the patients had full term pregnancies and, except for one who did not receive systemic treatment, their children were born healthy. The death of one child had no relationship with sporotrichosis. There was no need to continue the treatment for any of the patients after delivery, as all were cured. The most important aspects of the clinical cases are found in Chart 1.

DISCUSSION

The clinical symptoms of pregnant women with human sporotrichosis transmitted by cat do not differ from the classical ones, with predominance of lymphocutaneous forms. In the series of cases described by Barros and col., of the 178 patients with sporotrichosis examined between 1998-2001 only one patient was pregnant (0.56%) and she was treated with thermotherapy, with total resolution of the lesions presented.[3] In our case study, there was an increase in the number of pregnant women infected; the studied period was somewhat longer. Of 171 patients diagnosed between 1997-2009, five were pregnant (2.92%). Nevertheless, it can still be considered an infectious disease uncommon during pregnancy. Plauché described a pregnant woman treated with potassium iodide in 1986; despite the contraindications the child was born at term and healthy.[4] Roming and col. in 1972, as well as Vanderveen and col. in 1982 described thermotherapy as a therapeutic option to treat sporotrichosis during pregnancy.[5,6] More recently, in a report of nine sporotrichosis cases

Figure 2: Lymphocutaneous form of sporotrichosis in 23 weeks pregnant patient – lumbosacral region

Figure 1: Severe lymphocutaneous form of sporotrichosis in pregnant woman that was successfully treated with amphotericin B

Figure 3: Same patient of figure 2, now at 35 weeks' gestation. After heat treatment there was evidence of marked clinical improvement. The patient did not need further treatment after delivery

published by Agarwal and col. in 2008, one of the patients was pregnant (11.11%) and was treated with local heat, after which the lesions were healed.[7] Local heat therapy is based on fungi thermotolerance and was first described for treatment of chromomycosis by Tagami and col., in 1979.[8] At present, it may be indicated as an effective therapeutic option in subcutaneous mycoses in an otherwise healthy individual, with localized lesions. The treatment of choice should be based on clinical presentation, the immune status of the pregnant woman and the possibility of risks for mother and fetus, both from the medication and from the infection.[9] During pregnancy, the ideal is not to prescribe medication, mainly if the disease is not going to affect the health of mother and child. Therefore, it is important for the specialists involved - obstetrician, dermatologist, infectologist – to get together so that there is ample discussion and consensus about the need to establish a treatment, especially if systemic; this was our conduct. Azolic agent therapy in pregnancy should be avoided, due to its teratogenic and embryotoxic potential, since all are considered as category C; the use of saturated potassium iodide solution is contraindicated, since it is associated with neonatal hypothyroidism, thyromegaly, fetal respiratory obstruction and prolonged delivery, being counted among category D drugs. There are no reports on the use of terbinafine in pregnancy, as it is considered category B, which means that there are no studies regarding its safety in this group of patients and therefore its effects on the fetus are unknown.[10] One patient in our study who was treated with terbinafine became pregnant in the course of the sporotrichosis treatment, that is, its use during preg-

Chart 1: Summary of five sporotrichosis cases during pregnancy in a zoonotic epidemic in Rio de Janeiro, Brazil

Case #	Age of patient	Gestational age	Transmission	Clinical form	Location of lesions	Serological titers§	Treatment	Clinical Evolution	Delivery	Evolution of infant
1	21	3	CDC b	LC	Right hand and forearm	Not available	TBF 500 mg/d 125 days	Clinical cure	Normal at term	Healthy
2	31	14	CC	LC c	Right lower limb, up to inguinal region c	Pre-treatment 204800 upon clinical cure 6400	Amph. B – total dose 415 mg	Clinical cure	Normal at term	Healthy
3	30	34	SDC d	FC	Right thigh and left ankle	6400 1 pre-treatment sample	Local heat	Clinical cure	Normal at term	Died hours after delivery
4	28	19	CDC	LC	Left upper eyelid and left buttock f with painful enlarged lymph node	Negative 4 samples	Amph. B – total dose 225 mg	Clinical cure	Normal at term	Healthy
5	36	23	CDC	LC	Strip on right lumbar region up to anterior thoracic region	6400 (1st and 2nd samples)	Local heat	Clinical cure	Cesarean at term	Healthy

SDC = scratched by diseased cat / CC = contact with cat / CDC = contact with diseased cat / TBF – terbinafine / Amph. B – amphotericin B / LC= lymphocutaneous / FC = fixed cutaneous / a Became pregnant during treatment / b Veterinarian / c Pain when walking / d Mother became ill, contaminated by same animal / e Systemic hypertension / f Polyarthritis (wrists, ankles and right knee; without lesion in the ocular mucosa) / § Titers (IgG levels) are considered positive if ≥ 6400

nancy was not intentional. Amphotericin B is the most effective drug for the treatment of systemic sporotrichosis. There are no reports on harmful effects to the fetus and it is recommended in the treatment of severe sporotrichosis during pregnancy, although the frequency of its adverse effects, such as hyperpyrexia, nausea, vomiting, anemia and renal toxicity limits its choice in the treatment of localized disease. In the series of cases here reported there was no maternal-fetal damage with any of the therapeutic approaches. The death of an infant does not seem to be related to the infection, as the lesion was regressing spontaneously and the pregnant woman did not receive systemic medication but only local heat. In this case, drug therapy could have been implicated as the cause of fetal death. It is still not clear whether there is any fungal interference effect on the fetus, and a possible placental transfer is unknown. It is not possible to foresee, in a pregnant woman, the consequences of a more severe extracutaneous infection and its treatment, mainly such as have been seen in immunosuppressed patients during the epidemic. Currently, only two forms of treatment may be recommended to pregnant women: local heat or amphotericin B.[11] If the lesion is small and localized, and the pregnant woman does not present other intercurrences, the ideal strategy is to adopt a conservative treatment with local heat until the time of delivery, when the clinical progression can be reevaluated. The serological tests carried out by our group have shown good clinical and evolutive correlation. They are especially useful in cases of difficult diagnosis as a screening tool, or for follow-up of uncommon cases, as serum and other organic fluids, such as synovial liquid, may be used.[2,12] High titers have been shown in cases of disseminated disease. This case report has the objective of exposing therapeutic conduct difficulties for an emerging disease in special situations and calling attention to a new risk group in this epidemic. ❑

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