

# *Candida parapsilosis* Infection In A Rose Thorn Wound

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Puncture wounds with rose thorns have been associated with a variety of skin and connective tissue infections. Sporotrichosis is well known as a fungal infection associated with rose thorn puncture; however, other causes exist.<sup>1</sup> We report a case of soft tissue infection caused by *Candida parapsilosis* following a rose thorn puncture and provide a brief review of *C. parapsilosis* infections.

## Case Report

An 88-year-old woman visited her family physician in December for routine follow-up of hypertension and a recent episode of vertigo. She incidentally mentioned an inflamed area on her left leg, stating that she was worried about an infection. Initially she could recall no injury to the area but with further questioning recounted a puncture with a rose thorn 2 to 4 weeks before the visit. During the preceding week, she experienced itching and redness at the site. She reported no relief with antihistamine cream.

On examination her blood pressure was 150/86 mmHg, pulse 92 beats per minute, respirations 18/min, temperature 97.6°F. Findings on heart and lung examinations were normal. On the medial aspect of her left calf, the patient had a small (0.2-cm) puncture wound with minimal surrounding erythema. There was no evidence of foreign body. General and vascular examination of the lower extremities showed normal pulses and no other abnormalities.

The wound was treated conservatively with mupirocin 2 percent ointment, and the patient was told about the possible causes of the erythema, including fungal infection. She was asked to return in 1 week if the lesion had not resolved.

She returned 10 weeks later after using the mupirocin for 2 weeks, then trying a variety

of over-the-counter topical remedies, including hydrocortisone and polymyxin B-bacitracin ointments. She had developed an ulcer but had not returned because "It keeps scabbing over and feeling better, and I think it's going to heal."

Her temperature was 99.3°F, there was minimal left groin adenopathy, and she had a tender 0.5-cm ulcer with heaped-up margins, approximately 0.25-cm deep (Figure 1). Wet preparation for fungi using lactophenol cotton blue stain revealed slender, ovoid budding yeastlike forms. Bacterial and fungal cultures were obtained. The patient was prescribed itraconazole 100 mg daily with a presumptive diagnosis of sporotrichosis.

On examination 6 weeks later, the ulcer was found to be approximately the same diameter but more shallow and less tender. Routine and fungal cultures grew only *C. parapsilosis*. The itraconazole was continued, and the lesion was examined monthly. Liver function tests remained normal. After 14 weeks of therapy, the lesion was flat, markedly smaller, and nontender.

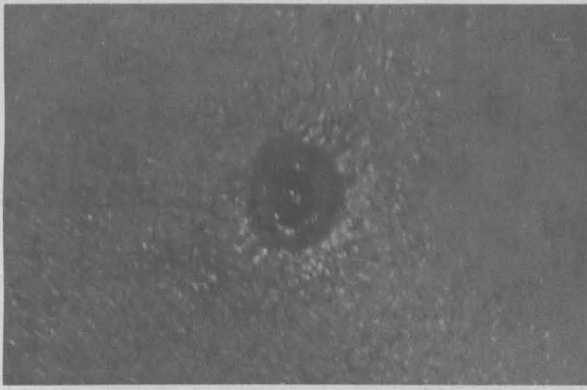
There was no palpable groin adenopathy. The itraconazole was discontinued, and the patient was instructed to apply ketoconazole 2 percent cream to the lesion. Complete healing occurred after approximately 6 additional weeks.

## Discussion

*Candida parapsilosis* is a ubiquitous fungus now recognized as an important nosocomial pathogen. As reviewed by Weems,<sup>2</sup> this organism has been isolated from the environment, from animals, and from normal humans; it appears to be less virulent than *Candida albicans*, yet it has accounted for up to 27 percent of fungemias in a large hospital-based series. It is particularly associated with medical devices or invasive procedures. Parenteral hyperalimentation is a major risk factor for candidemia by *C. parapsilosis*. Of 56 endocarditis cases, one-half of the patients were intravenous narcotic users, 60 percent had preexisting valvular heart disease, and 30 percent had prosthetic valves. Eye infections, particularly postoperative endophthalmitis, device-related arthritis and peritonitis,

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**Figure 1.** Colposcopic photograph of leg ulcer just before oral itraconazole therapy. Magnification  $\times 7.5$ .

occasional vulvovaginitis and oral candidiasis, and, rarely, central nervous system infections have been associated with *C. parapsilosis*.

Outbreaks of *C. parapsilosis* infection have occurred, including one in an ambulatory peritoneal dialysis ward in which the organism was recovered not only from peritoneal dialysate and catheter tips, but also from various surfaces in the ward and from pigeon guano on ward window-sills.<sup>3</sup> Similarly, exogenous, nosocomial *C. parapsilosis* infection has presumably been acquired through organism transmission from inanimate hospital surfaces or the hands of hospital personnel<sup>4</sup> and by cross-infection among patients during wound treatments.<sup>5</sup>

The importance of *C. parapsilosis* as a skin pathogen is less clear. It has been frequently isolated from the skin and subungual spaces<sup>2,6,7</sup> and other body sites<sup>4</sup> of healthy persons from various locales. It has also commonly been associated with pathologic nail and skin lesions<sup>2</sup> and is described as a causative agent in folliculitis.<sup>8</sup> *C. parapsilosis* has also been associated with venous leg ulcers,<sup>5</sup> perhaps preferentially those ulcers treated with zinc oxide-paraffin-impregnated compressive stockings.<sup>9</sup> The pathogenic role of the yeast in these situations is unclear, as many *C. parapsilosis*-associated ulcers improved without specific treatment<sup>5</sup>; however, ulcers associated with either *C. parapsilosis* or *C. albicans* healed slower than yeast-free lesions.<sup>9</sup>

We believe that *C. parapsilosis* likely played a pathogenic role in our patient because it was the only potential pathogen isolated from the lesion

and because the lesion initially progressed before antifungal treatment and then resolved with antifungal treatment alone. There were no apparent predisposing factors in this patient other than the rose thorn trauma.

The skin lesion in this patient was originally thought to be a fixed cutaneous lesion of sporotrichosis<sup>10</sup> because of its appearance, association with rose thorn injury, and the appearance of yeast forms on the wet preparation. We apparently confused the ovoid to elongate blastoconidia of *C. parapsilosis* with those of the yeast form of *Sporothrix schenckii*, which can be ovate or cigar-shaped and of similar size.<sup>11</sup>

### Summary

*Candida parapsilosis* should be recognized by primary care physicians as an important nosocomial pathogen, which is also frequently associated with sporadic skin and appendage infections. Its association with environmentally acquired skin ulcers can mimic fixed cutaneous sporotrichosis.

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