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PHOTO QUIZ

Palmar necrosis during the treatment of acute myeloid leukaemia

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CASE REPORT

A 32-year-old man was admitted to the haematology department for the treatment of acute myeloid leukaemia. He had no other significant medical history. He received a second induction cycle of chemotherapy consisting of cytarabine (1000 mg/m^2 twice daily, day 1-6), amsacrine (120 mg/m^2 once daily, day 4-6) and clofarabine (10 mg/m^2 once daily, day 1-5). In addition, because this treatment causes prolonged agranulocytosis, antimicrobial prophylaxis was given consisting of fluconazole 50 mg once daily, feneticilline 250 mg 4 times/day, ciprofloxacin 500 mg twice daily and tobramycin 120 mg 3 times/day for the prevention of yeasts, gram-positive cocci, gram-negative rods and selective digestive tract decontamination, respectively.

Figure 1. *Erythema with necrosis on the palm of the left hand*

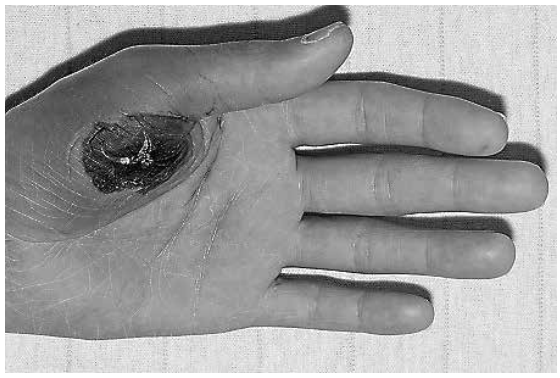
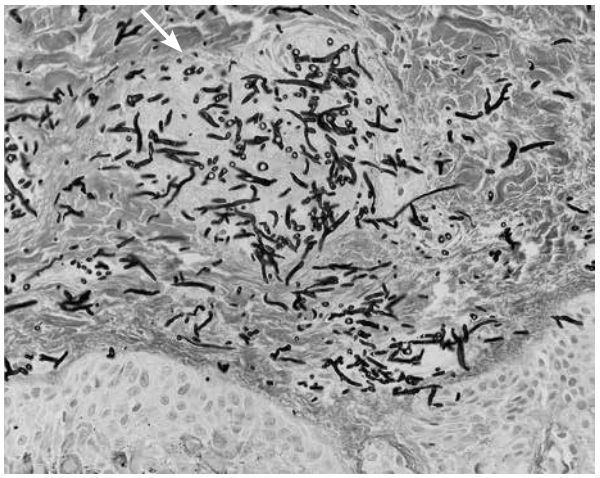


Figure 2. *Skin biopsy (x 200 objective)*



After 16 days, without previous trauma, the patient developed a progressive tender and erythematous macule with induration and central necrosis on the palm of his left hand (*figure 1*). He had no fever. Laboratory results showed the following: haemoglobin 5.4 mmol/l, leucocytes < 0.1 x 10^9/l and thrombocytes 33 x 10^9/l. A skin biopsy was taken (*figure 2*).

WHAT IS YOUR DIAGNOSIS?

See page 472 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (PAGE 467)

PALMAR NECROSIS DURING THE TREATMENT OF ACUTE MYELOID LEUKAEMIA

DIAGNOSIS

Microscopic examination of the skin biopsy revealed numerous mycelial filaments, which occluded the blood vessels (black arrow in *figure 2*). On culture *Aspergillus fumigatus* was grown.

Since a dermal mycosis was suspected in this immunocompromised patient, treatment with voriconazole 200 mg twice daily was initiated before the results of the skin biopsy were available. Amphotericin B 0.7 mg/kg/day was added 48 hours later because of rapid progression and was stopped after normalisation of neutrophil counts. The erythema resolved within a week. The central necrosis made surgical debridement with skin grafting necessary, after which the patient completely recovered. Voriconazole will be continued throughout immunosuppressive therapy following allogeneic stem cell transplantation.

Cutaneous manifestations are uncommon in aspergillosis, with a reported incidence of <5%.[1] Cutaneous aspergillosis may present as a primary infection after skin injury, for instance near intravenous access sites, burns or at sites with occlusive dressing. More often, it can be secondary when arising by spread from extracutaneous sites such as the lungs.[2] The initial skin lesion can rapidly lead to necrosis due to angioinvasion. *Aspergillus fumigatus* induces vascular invasion by microfilament rearrangement in endothelial cells and this results in endocytosis. In the vascular lumen the hyphae can cause endothelial damage and stimulate tissue factor activity with subsequent intravascular obstruction and thrombosis.[3]

During the cutaneous aspergillosis this patient experienced no signs of involvement elsewhere and a chest X-ray was normal. However, he had recovered from diffuse cytarabine skin toxicity before the cutaneous aspergillosis developed, which presumably was the porte d'entrée.

REFERENCES

1. D'Antonio D, Pagano L, Girmenia C, et al. Cutaneous aspergillosis in patients with haematological malignancies. Eur J Clin Microbiol Infect Dis. 2000;19:362-5.
2. van Burik JH, Colven R, Spach DH. Cutaneous Aspergillosis. J Clin Microbiol. 1998;11:3115-21.
3. Lopes Bezerra LM, Filler SG. Interactions of Aspergillus fumigatus with endothelial cells: internalization, injury, and stimulation of tissue factor activity. Blood. 2004;103:2143-9.

ERRATUM

In the Photo Quiz 'Rapid widening of the mediastinum after coronary angiography' by Seubert et al., published in Neth J Med. 2012 November; 70(9):415, 419, the white arrow in *figure 2* appeared in the wrong place in the printed issue of the Journal. The arrow pointed to the trachea and not to the site of bleeding that was situated above. In this corrected figure 2, the arrow is in the right place. We apologise for this confusion.

Figure 2. *Computed tomography of the chest with contrast shows an active bleeding focus in the right inferior thyroid artery*