Delayed pressure urticaria due to non-invasive blood pressure monitoring in a previously non-atopic man

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DESCRIPTION

A 68-year-old man presented to us with voiding lower urinary tract symptoms due to benign prostatic hyperplasia for which he underwent photovapourisation of prostate using potassium titanyl phosphate laser. The procedure was completed in 104 min uneventfully. Eight hours after the procedure, the patient had burning and itching on his left arm circumferentially in the area where the cuff for non-invasive blood pressure (NIBP) monitoring was applied and on his back. We removed the cuff and in that region of his arm there was erythema along with multiple blisters (figure 1). A similar linear lesion was seen on the right side of his back along the 10th rib (figure 2). We recognised it to be some form of urticaria, and immediately gave the patient an antihistamine (pheniramine). The patient had no history of any skin lesion, neither did he give a history of any allergies. Both lesions appeared in areas where there was continuous pressure applied: in the arm by the blood pressure monitoring cuff and on the back while positioning on the operation theatre table against his rib. A diagnosis of delayed pressure urticaria (DPU) was made, and the patient was given levocetirizine (5 mg) plus montelukast (10 mg) once daily along with oral prednisolone after which the lesions gradually subsided.

Figure 1 Erythema with blisters circumferentially on left arm at the site of non-invasive blood pressure monitoring cuff application—delayed pressure urticaria.

Figure 2 Erythema with blisters linearly along the 10th rib due to prolonged pressure because of inadequate padding while patient positioning in operation theatre—delayed pressure urticaria.

In DPU there is erythematous swelling on skin at a site where sustained pressure is applied after a delay of 30 min to 12 hours. Typically this delay is 4–6 hours. This swelling is accompanied by urticaria. Pain or blisters are occasionally seen.¹ Blisters were present in our patient. DPU is usually found in patients with known history of urticaria or angio-oedema. In our case the patient had no such history. This diagnosis is usually missed unless direct questions about development of weals at an area of sustained pressure are asked to the patient. DPU has been reported after wearing tight clothing, exercise bands, sitting on hard surfaces for prolonged periods, carrying heavy groceries and even after compression of the face against the pillow while sleeping.² The pathogenesis of DPU is not clear and is postulated by various authors to be type III reaction, response to a food allergen, mast cell mediated or leukotriene mediated. The diagnosis is made clinically by reproducing the lesion by application of pressure. Although there is no standard method of pressure testing the area is usually inspected for lesions 6 hours after performing the test.^{1,3} We made the diagnosis based on clinical history and treatment response. The treatment with antihistamines alone is usually not sufficient and requires supplementation with oral steroids. Other agents reported to be useful in treatment of DPU include

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non-steroidal anti-inflammatory drugs, colchicine, dapsone, sulfasalazine, intravenous immunoglobulins and omalizumab.^{1 3} Although our patient had no history pertaining to DPU, but if

such history is present, the patient should be carefully padded on the operating table, and the use of NIBP monitoring should be minimal or invasive blood pressure monitoring can be used.

Learning points

- ▶ Delayed pressure urticaria is usually seen in patients with previous history of urticaria or angio-oedema, but the diagnosis may be missed if specific history regarding weals developing at sites of sustained pressure is not asked.
- ▶ The treatment with only antihistamines is not sufficient and requires additional therapy of oral steroids, non-steroidal anti-inflammatory drugs, colchicine, dapsone, sulfasalazine, intravenous immunoglobulins or omalizumab.
- ▶ If a patient with delayed pressure urticaria is posted for surgery then he should be carefully padded on the operating table, and non-invasive blood pressure monitoring should be minimum or invasive blood pressure monitoring can be used.

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