

## Boils at Frictional Locations in a Patient with Hidradenitis Suppurativa

Dear Editor,

Hidradenitis suppurativa (HS) is a chronic, recurrent, inflammatory skin disease. The primary clinical presentation are painful inflamed nodules or boils of inverse areas, i.e. the axillary and anogenito-crural regions, but it can also involve the infra- and inter-mammary regions (1,2). The etiology of HS is not clearly defined. Obesity, smoking, and genetic factors are considered important risk factors. In addition, it has also been suggested that friction may contribute to the development of HS, especially in the obese, but this is based on highly anecdotal reports (3-5). We describe a case with classic HS, obesity, and HS-like lesions at the position of the bra strap, suggesting that mechanical stress was an external pathogenic factor for HS development.

A 33-year old woman presented with an 18-year history of chronic, recurrent, inflammatory nodules in the axillae, the groin, the pubic region, and to a lesser extent the abdomen and buttocks. She was obese with as result of 33.2 kg/m<sup>2</sup> of 33.2, had a positive family history of two first grade family members with HS, and was a smoker (19 Pack years). There were no other known comorbidities. The inflamed lesions had been treated with several courses of oral antibiotics (minocycline, erythromycin, and combination therapy of clindamycin and rifampicine) and surgical treatments: lancing, deroofting, and excisions (2,6).

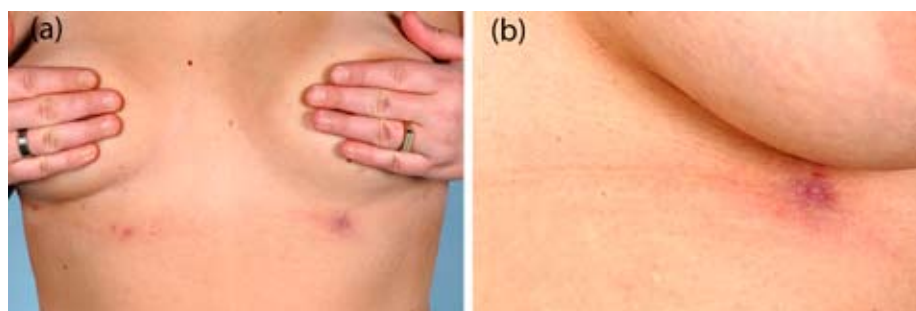
On examination, there were nodules, folliculitis, cysts, and depressed scars in the axillae and groins, including the inner thighs (Figure 1). On the chest, corresponding to where the lower edge of the patient's bra was usually located, a superficial nodule and follicular papules were observed, exactly coinciding with the red stripe caused by mechanical stress (friction and pressure) of the bra edge. There was no skin fold present on the location of the HS lesions, and there were no lesions observed in the intermammary region or on the side of the breasts in contact with the skin of the thorax (skin to skin contact) (Figure 2). Cultures from skin swabs showed commensal skin flora and moderate mixed anaerobic bacteria, as would be expected in a HS lesion.

It is well documented that HS is a disease of the obese. However, the role of friction as an environmental factor is poorly documented. Patients report that environmental factors such as tight-fitting clothing or friction could cause flares in the disease (2). Furthermore, it has been postulated that friction may contribute to the development of HS by stimulating interfollicular hyperplasia (7).

HS lesions arranged in a linear pattern suggest an environmental influence and suggests an etiopathogenic role for mechanical stress. Waistline, or as in this case the chest line, distribution indicates that wearing of tight waistbands, wide belts, or bras may induce HS in predisposed individuals. To our knowledge, there is only one case report describing an obese patient with classic HS (typical lesions in predilection areas) who developed HS like lesions on the upper abdomen (waist) at the height of the waistband as well as under the lower abdominal apron (skin on skin contact) (8). Two other reports suggesting a pathogenic role for mechanical stress are flawed, however, as neither of the cases showed signs of concomitant classic HS or had a family history, bringing into question the implied association of HS (9,10).



**Figure 1.** Nodules, folliculitis, cysts and depressed scars in the classic hidradenitis suppurativa (HS) regions, i.e. (a) the axilla and (b) the groin/inner thigh.



**Figure 2.** (a, b) Folliculitis and nodule on the chest, exactly coinciding with the red stripe, corresponding to where patient's bottom edge of the bra was worn.

In summary, we presented a case with classic HS locations (typical lesions on typical locations, i.e. the axillae and inguino-crural regions) developing inflammatory lesions on the chest at the location closely corresponding to where the bra strap was exerting mechanical pressure and friction on the skin. The lesions were clinically and microbiologically compatible with ectopic HS lesions. The chest is an atypical HS location free of apocrine sweat glands. It is postulated that these lesions may have been induced by mechanical stress, additionally triggered by the pro-inflammatory state of the obese body. Patients are encouraged to avoid friction from environmental factors such as tight clothing.

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