

## CASE REPORT

# Unilateral vulval hypertrophy in competitive female cyclists

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Four cases of unilateral vulval hypertrophy in competitive female cyclists are reported. This condition is unusual in the general population and often associated with serious pathology, including infection and neoplasm. It is previously unreported in female cyclists and should be included in the list of conditions that may affect them.

There have been many papers on the various problems affecting the perineal and genital area of both male and female cyclists.<sup>1–3</sup> These include short term erectile dysfunction, priapism, vulval trauma, and perineal nodular induration.<sup>3,4</sup> We present four cases of asymptomatic unilateral vulval hypertrophy in competitive female cyclists. The differential diagnosis of unilateral vulval hypertrophy usually includes more serious infective and neoplastic lesions,<sup>5</sup> but in this group the pathology is minor.

### CASE REPORTS

All the cases were seen by me over a 12 month period. None of these cyclists were known to be using anabolic agents, which can cause clitoral enlargement.

#### Case 1

An internationally ranked female track cyclist presented with pain, swelling, and induration of the left inguinal nodes. She was noted to have had several previous similar episodes in her six years of competitive cycling. Examination showed local folliculitis, and significant vulval hypertrophy of the left labium majus was noted. The patient was treated with oral antibiotics, which resolved the infection, but the vulval hypertrophy remained. The patient stated that this was the normal size of her vulva and that it had been that way for a number of years. She noted that, apart from occasional local discomfort after heavy training, it gave her no problems. She could not remember a specific incident of injury to the vulva leading to the hypertrophy.

#### Case 2

A nationally ranked junior female cyclist, aged 17, presented with a painful swollen right labium majus. She attributed this to a long road race using a poorly fitting seat. Examination suggested that an intravulval haematoma had formed; no evidence of infection was found. Local symptomatic treatment resolved the discomfort rapidly but the vulval enlargement persisted. At follow up at 1 year, it was noted that a further mild degree of hypertrophy had occurred despite there being no further trauma. This cyclist was also noted to have had several episodes of local folliculitis affecting both sides of the groin.

#### Case 3

A nationally ranked female cyclist presented for a routine gynaecological check. Pronounced vulval hypertrophy of the

left labium majus was noted. No other abnormalities were found. She had had previous local skin infections, but no vulval trauma.

#### Case 4

A retired internationally ranked female track cyclist presented for a routine gynaecological check up. Pronounced vulval hypertrophy of the left labium majus was noted along with local scar tissue and old sinus tracks in the nearby perineal skin. The patient was noted to have had multiple local infections but no significant vulval trauma.

### DISCUSSION

It would appear that considerable unilateral vulval hypertrophy (on average a threefold increase in breadth and a smaller increase in thickness compared with the normal side) may well be common in competitive female cyclists. Unilateral vulval enlargement is unusual in the general population,<sup>5</sup> and the differential diagnosis of unilateral vulval swelling would include a wide variety of infective and neoplastic lesions.<sup>5</sup> As the enlarged vulval tissue seen in cyclists has an otherwise normal appearance on inspection and palpation, it is unlikely that it would be easily confused with infection or neoplasia. Nevertheless, caution should be exercised if making this diagnosis.

Recurrent local abrasions and subsequent infection were a considerable problem in this group, but it does not seem likely that the infective lesions are directly related to the hypertrophy. The appearance is certainly not that of chronic lymphangitis or lymphoedema. Only one of these four cyclists had had a distinct episode of vulval macrotrauma, so it seems more likely that repeated microtrauma to the vulva may be the cause of the lesion. Although it is tempting to equate these lesions to the perineal nodular induration of cyclists first described by Vuong *et al*,<sup>6</sup> this would be unwarranted until histological studies confirm the similarity. The unilateral nature may reflect biomechanical factors such as muscle imbalance leading to slightly greater load on one side, which causes venous congestion or bruising and minor hypertrophy, which in turn leads to further asymmetric load. It is also possible that this phenomenon occurs bilaterally but the symmetrical nature of the enlargement means it is not as evident on inspection.

### Take home message

Unilateral vulval enlargement in competitive female cyclists appears to be more common than in the general population. The cause is not known. Other reasons for the phenomenon should be excluded before making the diagnosis.

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