

Multiple Iliopsoas Tendons and its Implications in Internal Snapping Hip Syndrome



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Background

Iliopsoas has gained increasing recognition as a generator of hip pain in **internal snapping hip syndrome (ISHS)**¹, with the snapping thought to arise from movement of iliopsoas over the iliopectineal eminence.

Although initial management of ISHS is conservative, tenotomy may be indicated in cases of persistent debilitating pain²

Post-tenotomy recurrence has been documented and is thought that this may be due to the presence of **multiple tendons** with only one tendon released during tenotomy³

Objective

To provide a detailed description of the **anatomical variations** of the iliopsoas complex

Materials & Methods

28 formalin embalmed cadavers were dissected (13 male and 15 female; 15 right and 13 left)

Iliopsoas was dissected in its entirety from its abdominal origins through to its insertion at the Lesser Trochanter

Tendons were cut at 2cm proximal to insertion to characterise the number and size of tendons

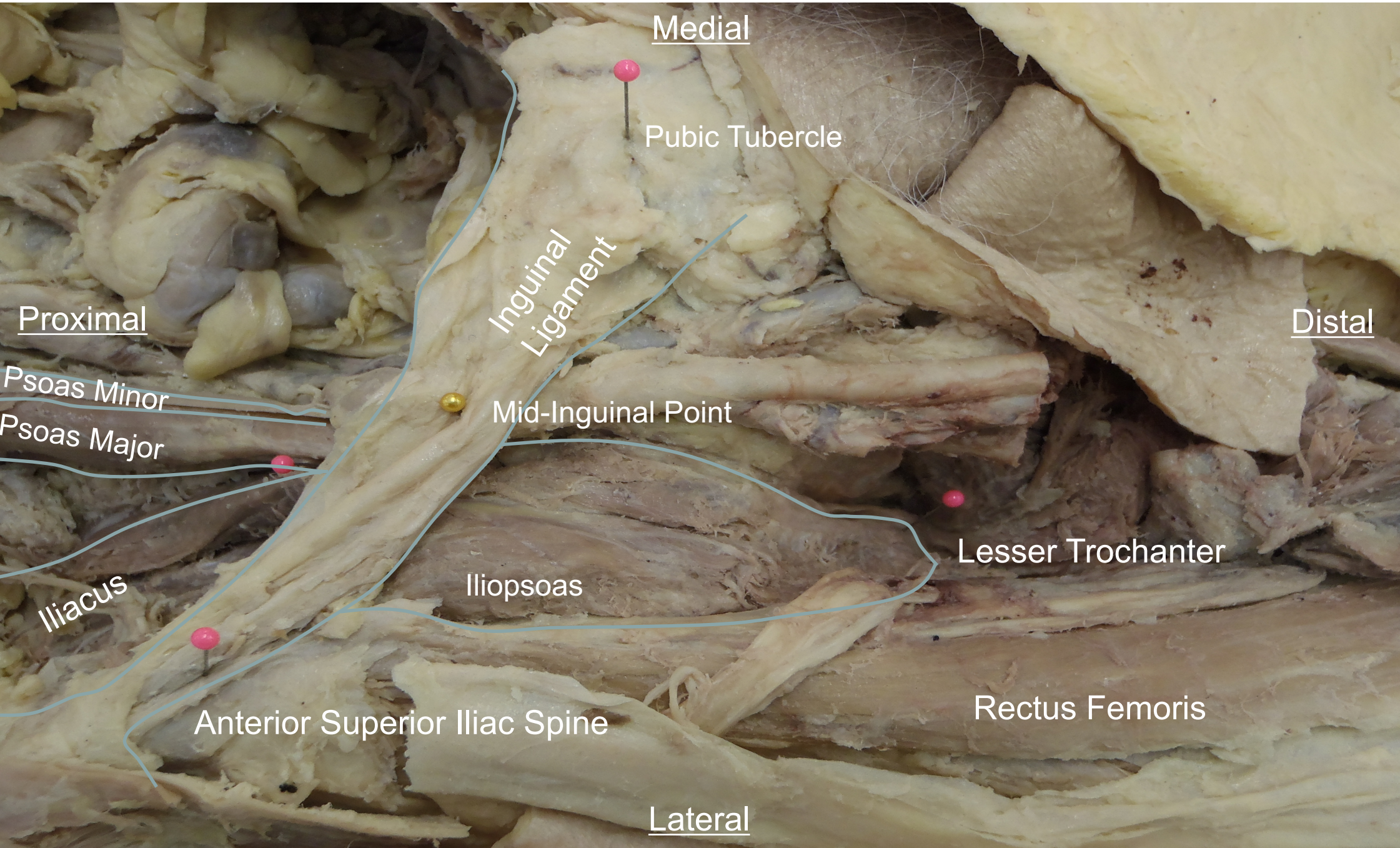


Fig 1: Example dissection of right iliopsoas

Measurements:

1. Number and course of all iliopsoas tendons
2. Distance measured from the mid-inguinal point to:
 - The Lesser Trochanter
 - The merging point of Iliacus and Psoas Major muscle bulks
3. Average and cumulative width of all iliopsoas tendons identified

Results

Length of the iliopsoas muscle from the mid-inguinal point to the lesser trochanter was **122.3 ± 13.0mm**

Iliacus and psoas major merged **24.9±17.9mm** proximal to inguinal ligament

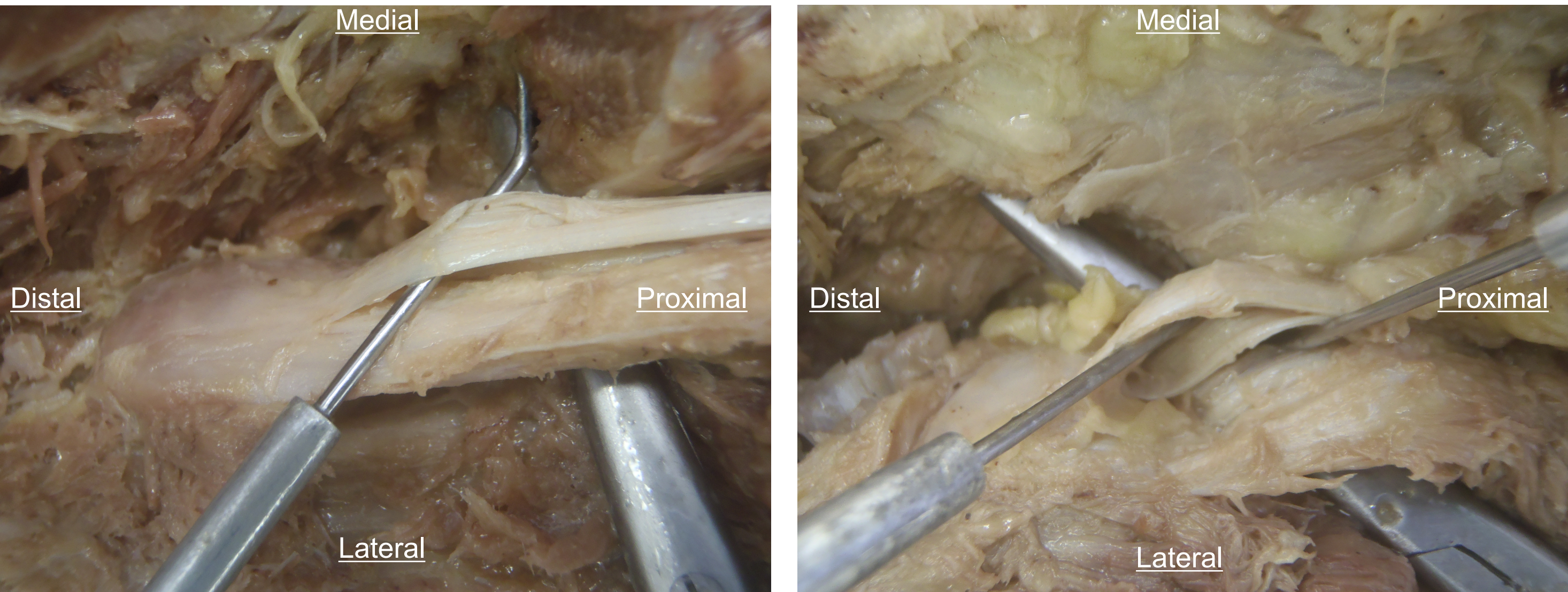


Fig 2: Double tendon specimen (left) and triple tendon (right)

Results Cont.

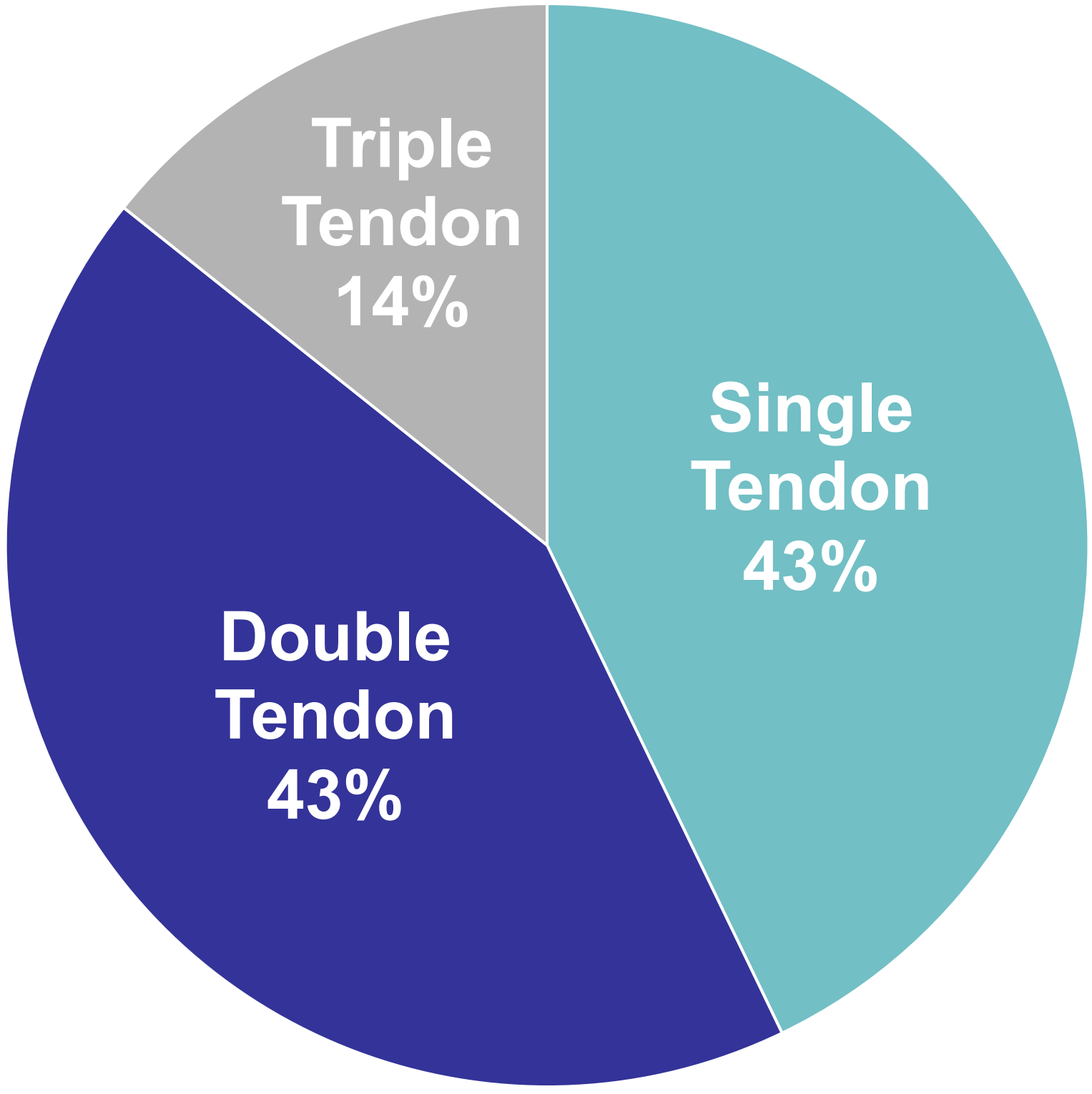


Fig 3: Number of iliopsoas tendons

Double tendons were found to be as common as single tendons

5 specimens were found to have three distinct iliopsoas tendons

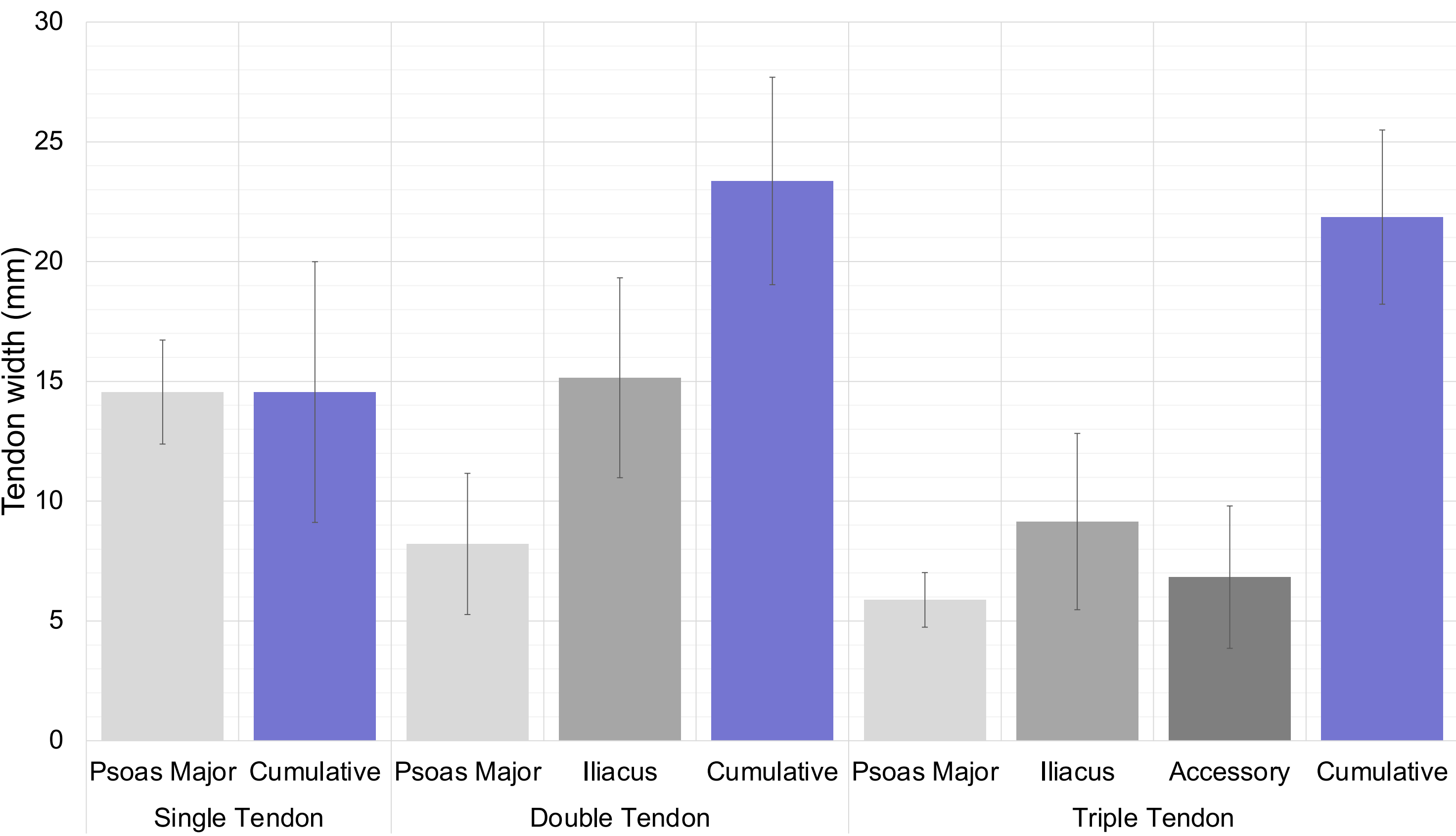


Fig 4: Individual and cumulative width of iliopsoas tendons

The **psoas major tendon was significantly larger in single tendon specimens** ($14.56 \pm 2.17\text{mm}$) compared to double and triple tendons ($P < 0.001$)

Conclusions

Multiple tendons of iliopsoas are more common than a single tendon

Multiple tendons are not a rare anatomical variant and may therefore constitute a potential cause of ISHS recurrence post-tenotomy.

Previous studies have suggested that a second tendon should be sought if the initial tendon encountered measures less than 1cm³.

We recommend that **a second tendon should always be sought**.

Arthroscopic surgeons should also be aware of the possibility of three iliopsoas tendons as these are by no means infrequent (15% in this study).

References

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