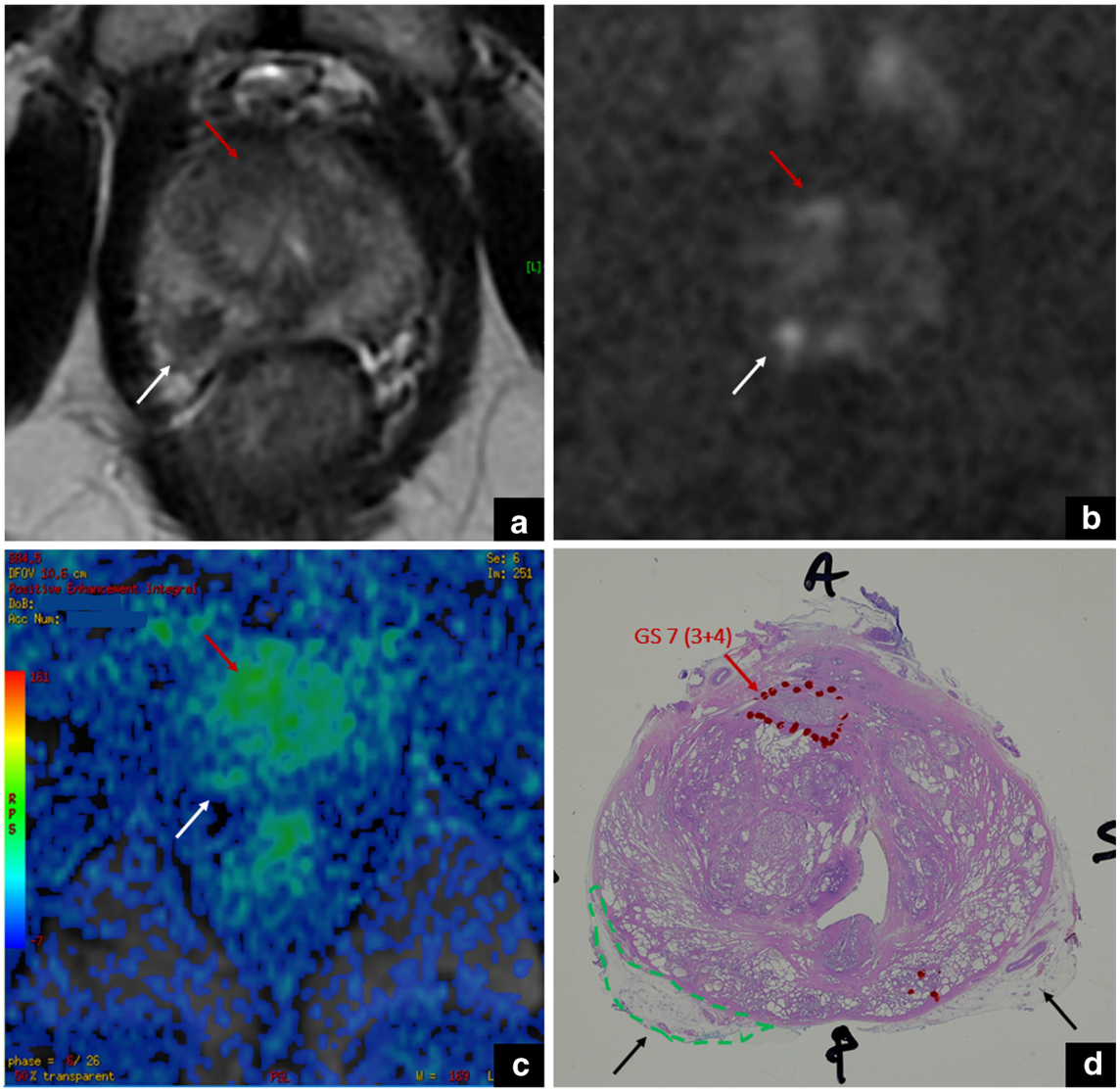

Fig. 3 Neurovascular bundle vs cancer. The white arrows show the neurovascular bundle in the axial T2-weighted (**a**) and DW (**b**) images, and in the DCE map (**c**). The high signal intensity on DWI (i.e., restriction) on DWI is due to myelinated nerve fibres. The red arrows show a tumour in the right anterior gland. These findings were confirmed at final histology, after radical prostatectomy (GS = Gleason score 3 + 4) (**d**)

pattern), we can correctly score this condition as 2/5 both on T2-WI and DWI, excluding the presence of cancer (Figs. 4 and 5). It follows that an appropriate use of PI-RADS v. 2 guidelines is based on the knowledge and awareness of the anatomy related to BPH nodules in the central zone.

We also want to stress that the key feature to differentiate a pitfall from PCa is the *symmetry* of the finding. An asymmetrical area characterised by lower signal intensity on T2-WI with respect to the background (3) together with a marked, focal enhancement (+) and higher grade of restriction on DWI (4) suggests a suspicious lesion in this context.

This is a clear example where the radiologist could be initially misled by PI-RADS v.2 but the knowledge of both the anatomy and the pitfall assists in the detection of PCa (*cancer in moustache sign*) (Fig. 6).

Median posterior BPH proliferation (teardrop sign)

The presence of a focal/nodular, hypointense area at the middle third or at the base (adjacent to the ejaculatory ducts) of the PZ of the prostate could mimic cancer. This aspect is a variant/extension of the previously described *moustache sign*, in which the central zone is compressed between the TZ and PZ, adopting a *teardrop* shape (Fig. 7).

Here, the pitfall is related to a posterior bulging of the central zone *above* the *verumontanum*, between the TZ and the PZ (*teardrop*), and could show mild, restricted diffusion and focal contrast uptake. The low signal intensity of this finding on T2-WI is due to the hypertrophic tissue that follows the ejaculatory ducts before entering the prostatic urethra.

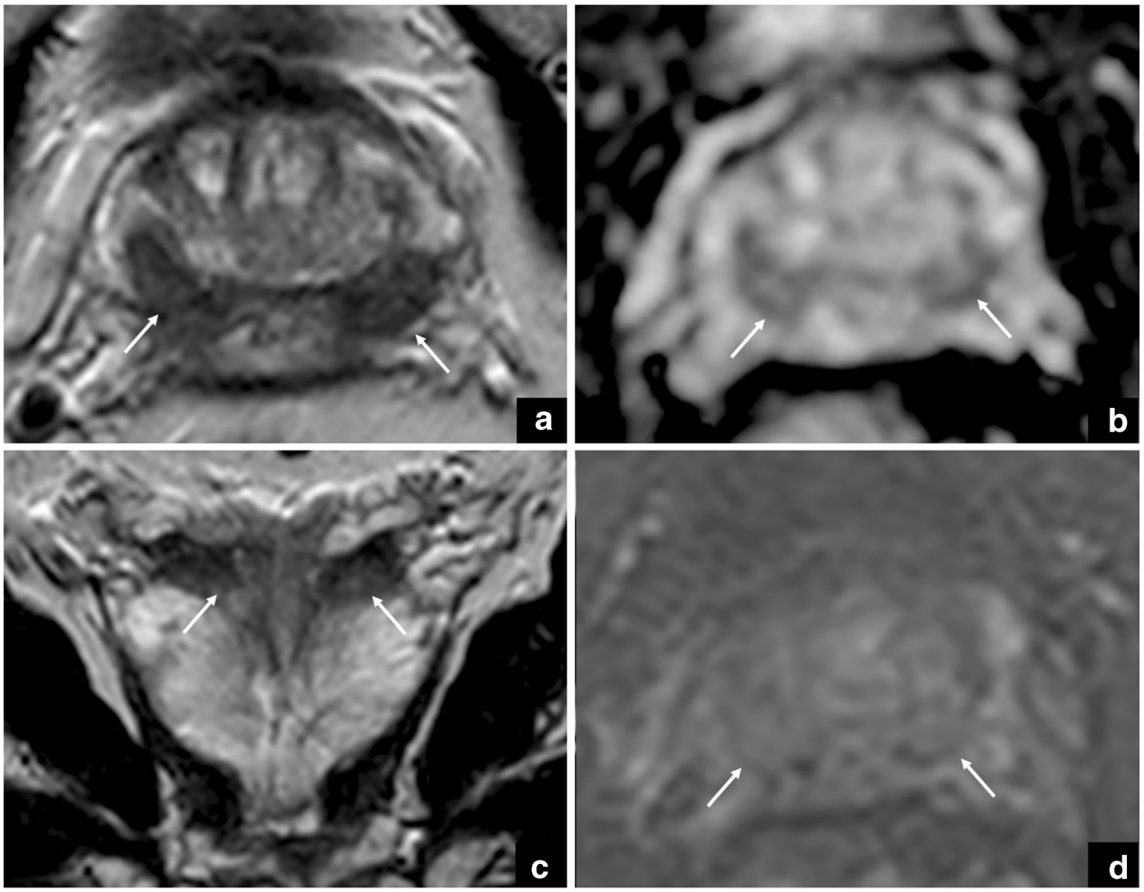

Fig. 4 The arrows show two median, symmetric, bilateral areas of low signal intensity on axial (**a**) and coronal (**c**) T2-weighted imaging, with restricted diffusion in the ADC map (**b**) and diffuse enhancement on DCE imaging (**e**). This set of appearances has been called the "*moustache sign*"

It follows that the *verumontanum* plays a crucial role to distinguish between the compressed central zone and protruding BPH. If our finding lies *above* the *verumontanum*, this can be due to both a bulging central zone (*teardrop sign*) or a protruding BPH (*teardrop-like sign*), while only BPH will be present *below* the *verumontanum*. Figure 8 is a summary of these signs (*moustache* or *teardrop*) at different levels. According to PI-RADS v. 2, a potential score for this pitfall could be 3/5 for T2-WI, 3/5 for DWI and early enhancement (+) on DCE, suggesting the presence of clinically significant PCa, with an overall score of 4/5. We want to emphasise that the use of the coronal and/or sagittal plane is very important to demonstrate the continuity and symmetry of this area with the rest of the central portion of the gland, and it is crucial to differentiate a pitfall from PCa (*cancer in pitfall*) (Fig. 9). As already discussed for the *moustache sign*, the radiologist could

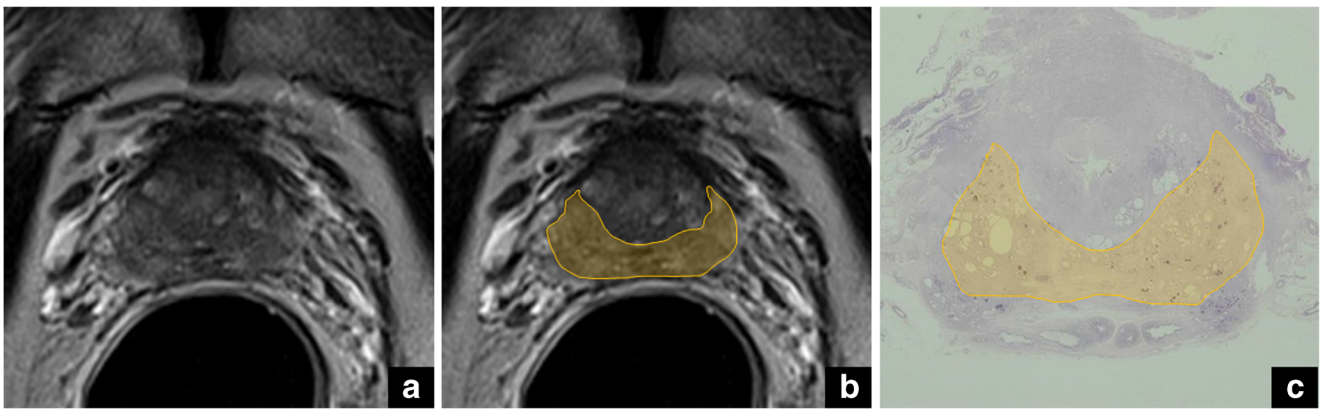

Fig. 5 Axial T2-weighted image (**a**) of the posterior base. The yellow areas (**b**) correspond to the protrusion of a large adenoma in the peripheral zone (*moustache-sign like*), as confirmed at final histology, after radical prostatectomy (**c**)