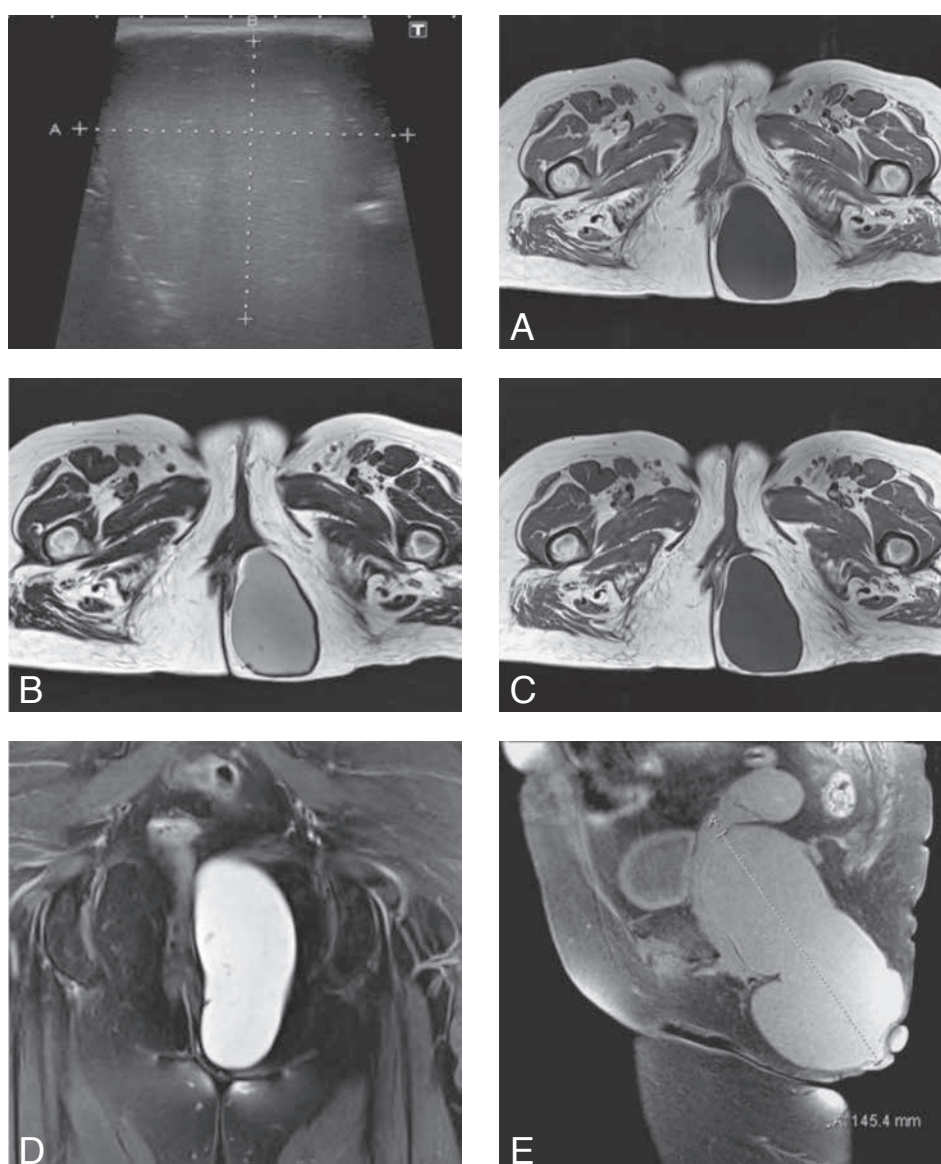


EPIDERMAL INCLUSION CYST OF THE PERIANAL REGION

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Key-word: Cyst

Background: A 51-year-old previously healthy woman presented with a perianal mass. The mass has been there for some years and has gradually increased in size ever since with progressive pain when she sits. There was no history of trauma nor injections in this region. Clinically, the mass was not tender and rather soft, with superficially some focal harder spots. A large lipoma was suspected on clinical basis. An ultrasonography and subsequent MRI scan, including sequences following administration of gadolinium contrast medium were performed.



	1	2A
Fig.	2B	2C
	2D	2E

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Work-up

Ultrasonography of the perianal region (Fig. 1) shows an iso- to hyperreflective, well-circumscribed subcutaneous mass extending to the deeper perianal tissues. There is no vascularisation on Doppler ultrasonography.

MRI of the pelvis (Fig. 2) shows on A (axial T1-weighted image) a well-circumscribed homogeneous structure located in the left perianal region. The lesion is hypo-intense relative to surrounding fat tissue, suggesting the absence of fat, and iso-intense to muscle tissue. On B (axial T2-weighted image), the lesion has a predominantly high signal intensity, suggesting a fluid containing, cystic lesion. Within there are some small hypo-intense spots. In combination with the findings on the T1-weighted images a protein rich content or fluid with debris is likely. On axial gadolinium-enhanced T1-weighted image (C), there is no enhancement after gadolinium administration, only slight peripheral rim enhancement. No septations, nor intrinsic solid components are seen. On coronal T2-weighted image with fat saturation (D), the lesion shows a homogeneous very high signal intensity. Sagittal T1-weighted image with fat saturation (E) demonstrates high signal intensity, confirming the absence of fat in the lesion. This sagittal image also shows well the extent of the lesion from the left perianal region through the ischiorectal fossa into the pelvis. There is no interference of anal sphincter components.

Radiological diagnosis

Based on the clinical information and ultrasonography findings a lipoma was the working diagnosis. MRI however suggested a protein rich fluid-filled cyst, e.g. giant epidermal cyst. Histopathological examination after surgical resection confirmed an *epidermal inclusion cyst*.

Discussion

Epidermal inclusion cysts are benign cystic masses located in the dermis all around the body, most frequently the face, the neck and the trunk. They result from a migration of epidermal cells to the dermis, but the actual reason for cystic mass formation is still undisclosed. Usually they are slowly growing and remain small and asymptomatic.

When becoming large, the lesions can cause discomfort, like in this case.

The most common finding on ultrasonography is a well-circumscribed, solid, hyporefective mass.

On MRI, epidermal inclusion cysts are well described round or ovoid lesions with intermediate signal intensity on T1- and high intensity on T2-weighted images. A heterogeneous signal pattern on T2-weighted images, with variable low-signal foci due to keratin debris, can frequently be found in these cysts. After gadolinium administration there is only peripheral rim enhancement.

In this case a high signal intensity on T1-weighted image with fat suppression excludes a lipoma. High signal on T2-weighted images suggests the presence of fluid. Peripheral rim enhancement and the absence of central enhancement after gadolinium administration also makes a solid composition unlikely. Differential diagnosis with other fluid filled cysts, such as ganglion cysts, is made by the observation of variable low signal intensities of T2-weighted images.

Solid tumors or hemangioma may mimic epidermal inclusion cysts because of high signal intensity on T2-weighted images, but can be excluded because they show variable or vascular central enhancement after gadolinium administration.

Asymptomatic epidermal inclusion cysts do not need treatment. When becoming symptomatic, treatment consists of wide excision, since there is some risk of recurrence.

Malignant degeneration in epidermal inclusion cysts is very rare.

Bibliography

1. Fujimoto H., Murakami K., Kashimada A., et al.: Large epidermal cyst involving the ischiorectal fossa: MR demonstration. *Clin Imaging*, 1993, 17: 146-148.
2. Shibata T., Hatori M., Satoh T., et al.: Magnetic resonance imaging features of epidermoid cyst in the extremities. *Arch Orthop Trauma Surg*, 2003, 123: 239-241.
3. Sung Hwan Hong, Hye Won Chung, Ja-Young Choi, et al.: MRI findings of subcutaneous epidermal cysts: Emphasis on the presence of rupture. *AJR*, 2006, 186: 961-966.
4. Vincent L.M., Parker L.A., Mittelstaedt C.A.: Sonographic appearance of an epidermal inclusion cyst. *J Ultrasound Med*, 1985, 4: 609-611.