



Figure 3 Gross examination of 9 cm x 2 cm cylindrical tail-like structure with pointy end

Microscopic examination shows a covering of keratinized stratified squamous epithelium. The dermis contained sweat glands, hair follicles, skeletal muscle, smooth muscles, nerve bundles, adipose tissue, blood vessels, and fibrous mesenchymal tissue (Figure 4 and Figure 5).



Figure 4 Dermal components, fat tissue, and blood vessels

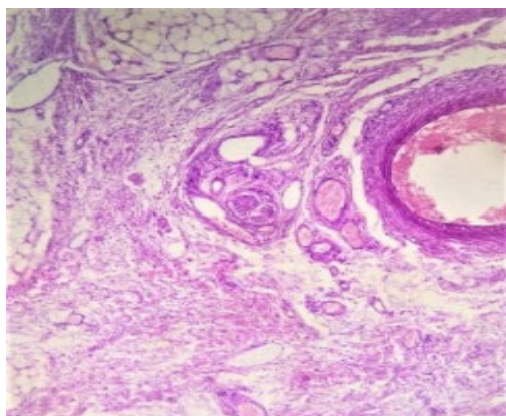


Figure 5 Blood vessel, smooth muscle, nerve fascicles, and other mesenchymal components

DISCUSSION

A tail with 10-12 caudal vertebrae is present in the human embryo during the fifth and sixth weeks of pregnancy. It regresses by having fewer vertebrae and fusing them, leaving only the vestige of a coccyx. A tail typically vanishes by week 8 of pregnancy, however, the precise time varies. A persistent "true" tail is a vestigial feature that most likely develops as a vertebrate remnant of the embryonic tail [3,4].

The most distal end of the typical embryonic tail that is present in the growing human fetus incompletely recedes to form the true human tail. The retention of the embryonic tail in humans may be caused by mutations that increase the *WNT3A* gene's upregulation [6].

True tails can occur in all races. Although familial occurrences have been described, true human tails are not inherited. In one instance, three generations of females in the same family were born with true human tails. No such family history exists for our newborn patient.

True tails were characterized as looking like a sausage, penis, finger, or stump and were frequently covered in hairy, pigmented skin. Males are twice as likely to develop it as females. Human tails lack the vertebral structures found in the tails of other vertebrates [3-5]. The diameter was between 0.7 cm and 3 cm, and the length varied from 3 cm to 13 cm [4]. In our case, the residual tail is 2 cm to 3 cm in diameter and 9 cm long. It exhibits spontaneous movement.

Histologically, Vestigial tails have central bundles of striated muscle that allow it to move, as well as mature adipose tissue, connective tissue, blood vessels, and nerve fibers. Skin with typical sweat glands and hair follicles covers the surface. Typically, the dermis is thicker than typical [3-6]. Our case shows all vestigial tail histology characteristics.

Pseudo-tails are lumbosacral protrusions that resemble true tails on the surface. In addition to being associated with additional lesions such as lipoma, teratoma chondrodystrophy, or parasite fetuses, they present as an abnormal extension of the coccygeal vertebrae and elongation of teratomas, adipose tissue, and cartilage [1,4-6]. It is the most human-like tail form and is linked to the spinal cord and spine abnormalities [1].

Congenital anomalies such as spina bifida, brain and craniofacial diseases, congenital heart disease, anal and vaginal atresia, horseshoe kidney, cleft palate, club foot, and syndactyl can all be accompanied by either a true or a pseudo tail [4-7].

The preferred imaging modality is Magnetic Resonance Imaging (MRI), which has strong specificity for defining anatomy and location as well as excluding other diseases including tethered chord syndrome, occult spina bifida, vertebral arch hypoplasia, myelomeningocele, or meningocele [8-10].

Clinical and radiological examination, followed by simple excision or removal and repair of the underlying lesion if it is accompanied by congenital defects, are essential in the management of human tails [11]. Histopathological examination is necessary to rule out teratomatous components and other related neoplasms.8 To rule out potential problems following surgery, especially in cases involving spinal dysraphism, long-term follow-up is required postoperatively [1,11].

CONCLUSION

This is an unusual case of a 47-day-old female newborn born to a primiparous mother through spontaneous vaginal birth having a vestige of a human tail and spinal bifida. Imaging is required to rule out any underlying anomalies before surgical therapy, and histopathologic examination is necessary to distinguish between a true tail and a pseudo tail as well as to rule out underlying pathologies.

DECLARATIONS

Ethical Approval and Consent to Participate

We sought and obtained written informed consent from the parents of the newborn to publish this article anonymously. This required no further review by the Institutional Review Board (IRB) of Jimma University.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Consent for Publication

Written informed consent was obtained from the parents of the newborn for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Availability of data and materials

Not applicable.

Competing Interests

The authors declare that they have no competing interests.

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Author Contribution

All authors have contributed equally.

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