

## Case Report

### Human tail- a rare anatomical mystery: A case report

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## ABSTRACT

**Background:** Human tails are rare entities and can be classified as true tails and pseudotails. True tails are composed of adipose tissue, connective tissue, muscles, vessels, nerves, and mechanoreceptors whereas pseudotails may be an anomalous prolongation of the coccygeal vertebra, lipoma, teratoma, chondrodystrophy or parasitic fetus.

**Case Presentation:** A 3-month-old male baby had a tail like appendage since birth which was gradually increasing in size. After complete workup, an elective resection was done under general anesthesia. Postoperative recovery was uneventful.

**Conclusion:** Surgical excision of the tail is the ultimate and may be the only surgical intervention required in these patients.

**Keywords:** Lumbosacral, Coccygeal, Lipoma, Teratoma

## INTRODUCTION

The occurrence of a human tail sparks a great deal of interest for doctors and medical students because of its rarity but brings about extreme stress to the parents of the child. Only about 40 cases have been reported so far.[1] The first case to be reported dates back to 1881. Tails like structures are formed in the prenatal period which absorbs into the body during fetal development which forms the coccyx or more commonly the tailbone. But due to a defect during the developmental period this tail persists after birth which presents as a tail. These tails are rarely found to be hereditary in nature.[2]

Embryonic tail consists of almost a dozen vertebrae in a 42 days old embryo. However, it gradually disappears over the next two weeks. Human tails are lumbosacral coccygeal appendages that are known to arise from distal remnant of embryonic tail.[3] Its histology comprises of muscle, vessels, nerves, connective tissue, and fat wrapped in outer skin layer. Though not proved, gesta-

tional diabetes mellitus is also thought to be a causative factor in the pathogenesis of lumbosacral appendages.[4]

Tails have been found to be associated with other pathologies of the spine and spinal cord, such as spinal dysraphism, meningocele and tethered spinal cord.[5] It is noteworthy to mention that there has been one case reported in literature with a vertebra in a human caudal tail.[6] Infrequently, a child is born with a 'soft tail', which contains no vertebrae but only blood vessels, muscles and nerves. Some of these tails may in fact be sacrococcygeal teratomas. Therefore, management should include a complete neurological history and examination and imaging as required. Here we present a similar case of a 3 months old infant who presented with a tail.

## CASE REPORT

A 3-month-old male infant was brought to pediatric surgery outpatient department of a tertiary care hospital with the complaints of a tail like structure protruding

from the lower back. According to the mother, initially it was approximately 4 cm in length and was soft in consistency. It was noticed to be increasing in size and reached approximately 6 cm in length at the time of presentation. The child was born of a consanguineous marriage, through a vaginal delivery. The mother had no history of radiation exposure, illness, or drug intake except the usual vitamin supplementation during her gestational period. He was 3kgs in weight and his birth APGAR score was 10/10. He had two elder brothers, and both were clinically normal.



Figure 1: Human tail arising from the lumbar region in a newborn.

Upon inspection, the infant had a 6 cm long flesh stick like structure dangling from the lumbosacral region (Figure 1). It had no spontaneous movement. The mass of the appendage was fleshy, well circumscribed and skin colored. There was no other associated lump on the back or any other part of the body. On palpation, it was having normal temperature, non-tender, soft, non-pulsatile, non-compressible, non-fluctuant. It had normal sensations. On examinations of the lower limbs there was no sensory or motor deficit. He had normal anal tone and no visible dribbling of urine or a palpable distended urinary bladder. An ultrasound of spinal cord was carried out which was normal. A decision was taken to excise it electively on the next elective list. The surgery went uneventfully. He had a smooth post-operative recovery. Histopathological examination of the excised tail showed skin covering a core of adipose tissue, collagen fibers and skeletal muscle fibers. No neoplastic, nervous, bony, or cartilaginous tissue was present.

## DISCUSSION

The first classification on human tails was made by Bartelet et al [7] in 1884. He classified the human caudal tails into four categories according to the shape and the containment of an osseous tissue. In 1984, Dao and Netsky [8] classified human tails into two categories as true tails and pseudotails according to their

histopathology. According to this classification, True tails contain muscle, adipose tissue, and connective tissue whereas pseudotails contain bone, cartilage, and remnants of notochord. In 2016, a new classification that divided human tails into five groups soft tissue caudal appendages, bony caudal appendages, bony caudal prominence, true tails, and other caudal appendages was suggested.[9] Still, all of these classifications have more value for embryology than for clinical practice.

The clinically helpful classification used today was published by Lu et al [10] in 1998, suggesting different criteria for true tail pseudo tail classification. He referred coccygeal and gluteal benign lesions as true tails, and he concluded that basic excision was the basis for its treatment. He described pseudotails as tail like lesions, accompanied by spinal dysraphism, and he explained that these tail-like lesions have ectodermal origin caused by the concomitant spinal dysraphism. and the main approach toward human tail cases is to search for an accompanying spina bifida or other anomalies, analyze them, and decide the best way of treatment after these examinations.

The histopathology, treatment, and prognosis of true tails and pseudotails are different so it is important to distinguish between them. The presence of cutaneous midline congenital lesions in the lumbosacral region such as vascular naevi, tufts of hair, dermal sinuses, subcutaneous lipomas, deviated gluteal furrows or a human tail may indicate the presence of occult spinal dysraphism.[11] The differentials include teratoma, lipoma and spinal dysraphism. These can be excluded by clinical examination as myelomeningoceles will usually present with deficits in motor power.[12] Teratomas usually are having presacral extension and serum alfa-fetoproteins are highly raised. However, when in doubt, Ultrasound or even MRI of the lumbosacral region shall be carried out to rule out important differentials.

Simple excision is required for true tails [13] but since pseudotails are associated with other anomalies so surgical treatment requires both removal and correction of the underlying lesion. Postoperatively, long term follow-up is necessary for tethered cord.

In conclusion, though very rare, human caudal appendages are not difficult to treat provided there is no neoplasia or spinal component associated with it.

**Consent to Publication:** Author(s) declared taking informed written consent for the publication of clinical photographs / material (if any used), from the legal guardian of the patient with an understanding that every effort will be made to conceal the identity of the patient, however it cannot be guaranteed.

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