

Coccydynia. State of the art in 1770 - report on a medical thesis written in Latin

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Abstract

The translation of a medical thesis written in Latin in 1770 by Jean-Cosme d'Angerville about coccydynia provides information about how this condition was understood and managed in the 18th century. Coccydynia is no longer considered as the consequence of a fracture, but as the result of a luxation of the coccyx due either to a fall (inwards luxation) or to childbirth (outwards luxation). Anatomy, physiology, diagnostic work up and treatment according to the suspected mechanism, are carefully described.

This thesis mirrors the views and pays tribute to Jean-Louis Petit, a French surgeon, who wrote about this condition and inspired its writing.

Introduction

There is a certain degree of curiosity when discovering old medical documents. They tell us about the difficulties faced by our forerunners, how diseases were viewed, the hot topics of the day, and the opposing arguments being made. However, there may be a language barrier because the language of science used to be Latin, which remained the situation until at least the 17th century, and it was still widely used in France throughout the following century [1]. Having since fallen out of favour with educators, unfortunately nowadays there are few still able to read it.

In 1770, Jean-Cosme d'Angerville, a surgeon at the Hôtel-Dieu Hospital in Paris, published his medical thesis entitled *De Coccygis Luxatione* [2]. This thesis, written in Latin, is interesting insofar as it attributes the cause of coccydynia not to a fracture of the coccyx, as had previously been thought, but to luxation (anterior or posterior), also called dislocation, and describes the associated treatment. The author of this report translated this document in the belief that it represents a milestone in the history of our understanding of coccydynia.

Materials and method

The thesis is available online [3]. It comprises 21 pages and two sections (Anatomical presentation and Surgical presentation), preceded by a dedication and foreword. The author of this report studied Latin at school. For the translation, he was assisted by a private teacher for the first 13 pages and by the use of an online forum where necessary for certain problematic phrases [4].

Results

Introduction The thesis opens by lamenting the human condition, since all of us are fated to die from some form of illness, albeit some more severe than others. This prompts a quote from the Roman poet Martial, 'Tomorrow's life is too late. Live today'. As if that were not enough, throughout our lives we may also succumb to other conditions which, although less severe, are nevertheless very painful to bear. These conditions can instil fear, or even terror, an irrational response since they can be cured. The author, and here we discover the purpose of his thesis, believed it was time to overcome this irrational response, especially in relation to tailbone pain, and thus offered the results of multiple dissections, clinical observations and an exposé of therapeutic solutions.

Anatomical presentation The coccyx gets its name either from its resemblance to a cuckoo's beak, or, according to French anatomist Jean Riolan, from the sound of the farts that leave the anus and dash against this bone that resembles the cuckoo's call; another theory is that the name comes from the Greek kollasthai which means to join, reflecting the fact that the coccyx is joined to the sacrum. It comprises 1–3 bones, which tend to fuse as we get older. Tails in animals are in fact a prolongation of the coccyx, and some humans are also born with a tail, as described at various times by Pliny, Marco Polo, Harvey and Dimerbroeck.

The first bone is large with two processes. The second bone is the smallest. The third bone is longer and its tip has 'several bumps'. They are joined by a 'ligamentous substance'. They vary greatly in shape. In men, the coccyx follows the curvature of the spine. In woman, it sits more vertically. The author concludes, 'We must therefore admire the divine prudence of the supreme Creator, who designed the shape of these bones in order to form a wider birthing canal and provide an exit for the foetus. During childbirth, the coccyx can be pushed backwards with the finger to create more space. This is particularly easy during pregnancy because the ligaments become

seeped in a serous lymph making them softer, especially in young women. In older women, the bone hardens to the point that it can barely move.

Four muscles insert onto the coccyx: coccygeus, iliococcygeus, levator ani and anal sphincter.

The coccyx has three functions. It provides the insertion for the levator ani muscle. It supports the rectum and its sphincter. It closes off the spinal canal, preventing air-related damage to the spinal cord.

Surgical presentation. This chapter begins by paying homage to Jean-Louis Petit, who the author sees as a sort of Mentor [5]. Echoing Petit's ideas, the author explains that pain at the base of the tailbone is due to deviation (*diversio*) or, rather, abnormal displacement of the coccyx, for which he coins a Latin word (*dimotio*) that can best be translated in English as dys-motion i.e. abnormal movement not followed by a return to the usual position. This condition is commonly known as luxation, although the joint is not truly dislocated because there is not as much slippage of the bones and it is not permanent. The luxation can be anterior or posterior type (luxation inwards or “depression” and luxation outwards or “overturning”, to use the terms given by Petit in the English version of his treatise) [5]. The author adds that he has personally also witnessed sideways luxations, which are extremely rare and ‘require no special treatment’. The sole cause of posterior luxation is a problem during childbirth. Anterior (and lateral) luxation can be caused by a fall or a blow directly to the coccyx. The displacement always affects the sacrococcygeal joint.

A diagnosis requires an examination (physical signs) and ‘signs of theory’ (symptoms). The first ‘do not help much’. In fact, the luxation is so subtle that it is not always palpable, and positional abnormalities (curvature or prominence of the coccyx) can also be found in healthy subjects. The theoretical signs are more precise: a feeling of heaviness in the anal region and severe pain ‘that exerts its terrible cruelty’ when moving the thighs, urinating, defecating, coughing or sneezing. The anal heaviness is attributed to the displaced coccyx pressing on the rectum (in cases of anterior dislocation) or the fact that the rectum appears to press harder on the stretched ligaments (in cases of posterior dislocation). The severe paroxysmal pain is due to the movement of the gluteus maximus muscles which attach to the coccyx, or to the fact that the coccyx has been immobilised in an unusual position and becomes extremely painful when mobilised. However, the causative trigger, which should be identified by questioning the patient, remains the most reliable diagnostic element.

Prognosis is better for posterior luxation (after childbirth). Anterior luxations, caused by trauma, are always accompanied by bruising which, if left untreated, can lead to an abscess and death. This associated bruising is why anterior luxations are more painful than the posterior type. Certain women may be too embarrassed to seek medical attention. The author recalls a case study presented by Petit where a woman died after six months from the consequences of coccygeal osteitis that was diagnosed too late.

Treatment

A posterior luxation can be reduced by manually pushing the coccyx inwards. It can then be held in place with a carefully adjusted T-shaped bandage that allows all-natural functions to occur without the need for removal. Recovery can be improved by prescribing a tranquil mind and body. In support of this particular prescription, the author quotes Hegesippus of Jerusalem, a second century Christian chronicler, who wrote, 'Nothing worsens the arduousness of an injury so much as the impatience of having to bear it'. He recommends eau de vie with a drop of alum, camphorated spirits of wine, and in general, any spiritual remedy.

A posterior luxation can be reduced manually via the rectum. Once reduced, the coccyx must be held in place by inserting a paste into the anus that must remain there for 'several days'. This in turn should be secured with an appliance and well-adjusted straps.

The author specifically advises against the topical use of oils for two reasons. First, very few recommend this as a treatment. Second, Petit witnessed cases of skin reactions. Oil is necessary for the rectal examination, but the oil used for this purpose is not therapeutic.

General measures are always recommended, such as frequent blood-letting of any contusions, drinking plenty, fasting, and possibly enemas. When in bed, the pelvis should be supported by a cloth ring to avoid any pressure on the coccyx. If the patient is tired of being bedbound, he should sit on a chair without a seat.

Discussion

This thesis was discovered on the website www.coccyx.org, managed by Jon Miles. Its translation gives a fairly accurate idea of what people knew about coccydynia and, more generally, of medical theory in the seventeenth century. At the time, Latin was the international language of science. It was not until 1854 that France finally issued a

decree authorising the use of French in university theses, and the last thesis to be written in Latin was published in 1911.

The author of this particular thesis, Jean Cosme d'Angerville, was a surgeon at Hôtel Dieu Hospital in Paris. He does not appear to have written any other papers and we know nothing else about him, other than he died in 1784 on the island then known as Hispaniola. His thesis, as he himself states, was inspired heavily by the works of Jean-Louis Petit, who published a 'Treatise on Diseases of the Bone' in 1705, which was reprinted regularly until 1838 [5]. This treatise explained that coccygeal pain was caused by a luxation of the tailbone either inwards, due to a fall or blow, or outwards, due to difficult childbirth. This was a novel idea, because for over a thousand years the only recognised cause of coccydynia had been a fracture. This is clearly stated in the writings of Paul of Aeginus (Greek physician, 680), Albucasis (or Al-Zahrawi, Arab physician, 1000), Guy de Chauliac (French physician, 1363) and Ambroise Paré (French physician, 1575) [6]. Petit was careful to explain that it was not a true luxation in the anatomical sense (loss of contact between two joint surfaces), but rather an abnormal displacement that he dubbed dis-arrangement. However, wanting to keep things simple, he chose instead to use common parlance and described it as a dislocation. According to the description by both Petit and d'Angerville of this luxation, it is different from what we now know to be a true luxation of the coccyx as shown on dynamic x-rays (one taken with the patient standing, and one with the patient in a painful seated pose) [7]. In nearly every case, the coccyx returns to its normal position when standing. The author of this report have found permanent luxation to be very rare [8].

A few other points are worth a mention. Although d'Angerville's anatomical description of the coccyx is generally accurate, he says the curvature is lesser in women in order to make childbirth easier. However, a recent study does not support this statement; on the contrary, it gives an average sacrococcygeal angle in women of 165° compared to 170° in men [9]. Riolan's theory whereby the sound of the farts that dash against this bone is similar to the cuckoo's call hence the name 'coccyx' is authentic...

The author clearly distinguishes between symptoms and signs. He rightly notes that the former are more reliable than the latter, because the signs are subtle and not only hard to diagnose, but may also be found in pain-free individuals. Surprisingly, pain when sitting, which is nowadays the primary diagnostic factor of coccydynia, is not

mentioned in the list of symptoms. The author only refers to it in the section on ‘Treatment’, advising that the patient may sit in a chair if bored of being in bed, but only on a chair without a seat.

Finally, when discussing the case of a young woman who died from a coccygeal abscess following a fall, d’Angerville reminds us that, 250 years ago, it was possible to die from tailbone pain which was surely the primary concern for every doctor.

Conclusion

This 1770 thesis highlights the importance of classifying injuries based on the causative trauma, makes the highly relevant observation that clinical signs can also be found in healthy subjects, and offers us this quote from Hippocrates, ‘Medicus, si sufficerit ad cognoscendum, sufficerit etiam ad sanandum’ (the doctor who can understand can also cure). A motto that still holds true two hundred and fifty years later.

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