

lest the bladder give a great deal of annoyance in the early stages of convalescence. In this I have been happily disappointed. Catheterization is not necessarily prolonged beyond the period required in the simpler gynecological operations. If any tendency in that direction threatens, I do not hesitate to get the patient out of bed to use the commode any time after the third day.

This operation at the present time comes into competition more especially with the operation of interposition of the uterus between the bladder and the vaginal wall. In the early stages of prolapsus, in which the cervix has not yet protruded at the vulva, that operation seems to serve very well. I have used it and found it satisfactory. The principle involved in the support of the organs in this operation is founded upon the retaining power of the uterine ligaments and the support of the perineum. If the uterine ligaments are sufficiently short to be drawn taut when the uterus is inverted into this position, then they keep the uterus within the vulva and therefore hold up the bladder which is on its back. If the uterine ligaments are sufficiently elongated to allow the uterus to protrude beyond the vulva, then, naturally, they can exert no supporting influence, and the uterus becomes simply a pad and is beneficial only on account of its bulk. It must therefore rest upon the perineum and depend exclusively upon it for support, with the exception of the supporting power of the vaginal fascia. Observation and experience have demonstrated that any foreign body, and that is what the uterus becomes when so utilized, resting directly upon the floor of the pelvis, sooner or later thins out the perineum, and robs it of its sustaining power. This is true of the use of pessaries of all kinds, especially large rubber rings or ball supports, either solid or inflated, which were at one time in vogue for the palliation of prolapsus. Dr. George B. Somers, of San Francisco, in a paper read at the last meeting of the American Medical Association, seemed to think that the uterus was in itself a support. This is not true, except as it acts as a foreign body. We must look beyond that and ask, what supports the uterus? He forgets that the uterus is itself the original offender, and the cystocele is largely the result of its prolapse. Now, as a matter of fact, in some of these cases of interposition the ligaments have not been short enough to retain the uterus, and the whole mass, uterus, bladder, and rectum, has been extruded through the vulva, and the question arises, what is the best method of shortening these ligaments? By shortening them first and then turning the uterus down? Is it not far better and simpler to take the uterus out and reconstruct a new support?

At a recent operation for interposition of the uterus, of which I was a witness, after the uterus had been turned down, the constant tendency was for the fundus to slip out through the vulva, and the operator had the greatest difficulty to keep it in while he stitched together the vaginal wall in front. Question: Did the uterus hold up the vaginal wall, or the vaginal wall the uterus? Moreover, I myself, in my series of interposition operations, have had two cases in elderly women in whom the uterus was hanging at the vulva, in both of whom

the whole mass of uterus, bladder, and vagina was forced out through the vulva, inside two years after the operation. I relieved them by resorting to my own operation and secured permanent results in both instances.

The only objection that has thus far been offered in criticism of my operation, is that it is complicated and difficult. To this I submit the response, that to a skilled gynecologist nothing that promises such assured results as this operation does, should be too difficult. Of what sort of stuff is a man made who will throw up his hands in the face of an approved surgical procedure in his own specialty and say "I cannot do it, it is too difficult?"

616 MADISON AVENUE.

### APOPHYSITIS OF THE OS CALCIS.

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There is a painful condition of the heel often called to one's attention, which always occurs in children, generally those who are over weight for their years, are physically active, and have strong muscles.

The picture is somewhat as follows: The child is usually seen on account of a slight persistent limp, with a marked disinclination to complete the

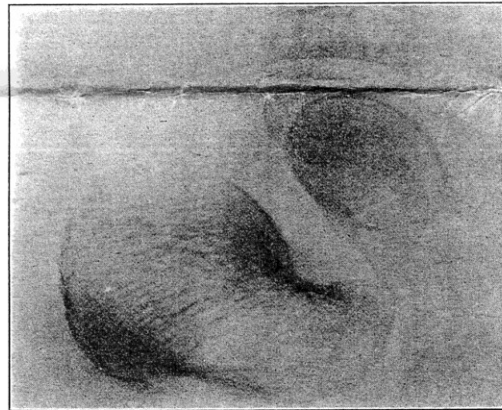


FIG. 1.—Child, aged five years; normal, no centre of ossification.

full step in walking. There is also tenderness complained of about the posterior aspect of the heel, low down, which has persisted for several weeks, or months without change. The child has usually worn a low shoe or sandal, with either a spring heel or none. There may or may not be a history of injury, but the child is generally well over weight for its years, has been very active, and is strong physically. There also may be a slight amount of pronation of the foot. That the conditions may also be secondary to undue shoe pressure on the heel from a tight or too close fitting counter I believe has not been determined.

An examination shows a moderately tender area on pressure over the posterior portion of the os calcis, deeply situated, and localized in front of the

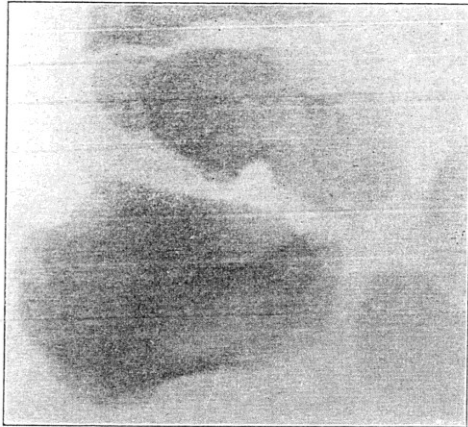


FIG. 2.—Boy, aged six years; normal, no centre of ossification.

tendo Achillis on either side. There is invariably moderate porky thickening about the whole posterior portion of the os calcis, with some tenderness, and with partial obliteration of the hollows on either side of the tendo Achillis. The motions of the foot are all slightly limited, especially in full dorsal flexion, and any movement which tends to put a strain on the tendo Achillis causes pain. There is pain and tenderness on weight bearing when the heel is put on to the floor, but less so when walking on the toes with the heel elevated.

The disease resembles somewhat the condition known as achillobursitis, an inflammation of the bursa between the tendo Achillis and the os calcis, but is much more extensive and deep seated. There is also to be considered before making a diagnosis the condition of tenosynovitis of the tendo Achillis, and calcaneal spurs on the under surface of the os calcis. These spurs, however, rarely if ever appear so early in life. Tenosynovitis is easily distinguished by the presence of the tendon crepitus and pain referred to the tendon itself. There is also the condition where the bursa between

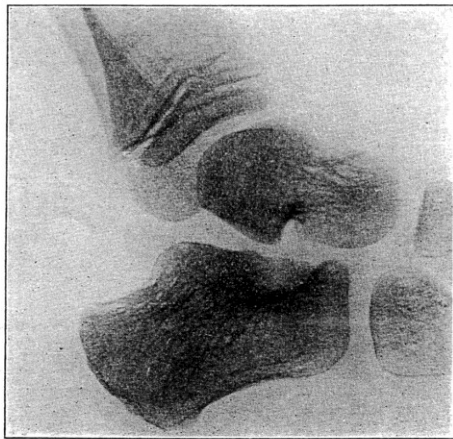


FIG. 3.—Small child, aged six and a half years; centre of ossification just beginning to develop.

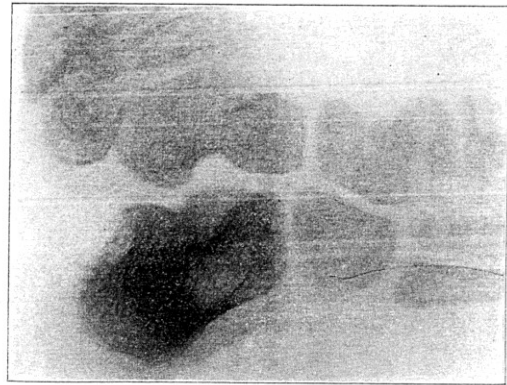


FIG. 4.—Boy with rickets, aged seven years; no centre of ossification.

the tendo Achillis and the skin of the heel is irritated from shoe pressure, which has to be differentiated. The x ray will usually clear up the question at once, but even without this the condition is fairly characteristic.

The x ray findings are of interest, and are prac-



FIG. 5.—Girl, aged seven years; weight, 80 pounds; large centre of ossification; normal for this case.

tically constant whenever the ossification of the epiphysis is sufficiently developed to show the characteristic changes. Of course when the centre of ossification is small or not present the changes as shown in Figs. 6 and 13 cannot be seen, as may be noted by contrasting these with Figs. 9 and 2. The



FIG. 6.—Same girl as represented in Fig. 5; left foot, large, irritated epiphysis, with marked symptoms.

epiphysis is of course always present, but when cartilaginous in early life does not appear in an x ray picture. Injury to it, however, may cause the usual



FIG. 7.—Girl, eight years of age, normal size. Note large amount of normal ossification and the two centres.

characteristic symptoms. See Case V, Fig. 11. There is always to be seen in comparing the plates of the two feet an enlargement of the epiphysis itself on the affected side, both in thickness in the anteroposterior plane and also in length from top to bottom. There is also considerable cloudiness along the epiphyseal line between the epiphysis and the os calcis, suggesting a deposit of new bone, and often with a partial obliteration of this epiphyseal line. These findings are typical and constant, and never occur in any other condition. Often the condition suggests a slipping of the epiphysis, with the customary inflammatory reaction following such a condition, or epiphysitis. Similar conditions existing in the tibial tubercle have been spoken of as Schlat-ter's disease.<sup>1</sup>



FIG. 8.—A girl, nine years of age, usual size; note large centre of ossification, normal.

<sup>1</sup>Blencke, *Münchener medizinische Wochenschrift*, xxvii, p. 388, 1910; Haglund, *Zeitschrift für orthopädische Chirurgie*, xxvii, 4, p. 475; R. Romme, *Presse médicale*, No. 34, 1907; Schlat-ter, *Beiträge zur klinischen Chirurgie*, lix, p. 518.

In differentiating this condition from tuberculo-sis it must be remembered that tuberculosis gen-erally attacks the anterior portion of the os calcis does not lead to bony atrophy, and is usually uni-lateral.

DEVELOPMENT OF THE EPIPHYSIS OF THE OS CALCIS.

The epiphysis of the os calcis may develop by one or two centres.<sup>2</sup> It is stated that the centres of ossification appear in the epiphysis at the ninth year on the average, and that the epiphysis is united to the os calcis either before puberty or soon after. I think that the epiphyseal ossification usual-ly begins well before the ninth year, for in all the cases I have seen the x ray shows it developed by seven years. When the epiphysis develops by two centres of ossification, care must be taken in inter-preting the x ray not to confuse the condition with that of a fracture of the epiphyseal cartilage, as may well be done (see Fig. 15).

It must be remembered, however, that children large for their age will always show greater and

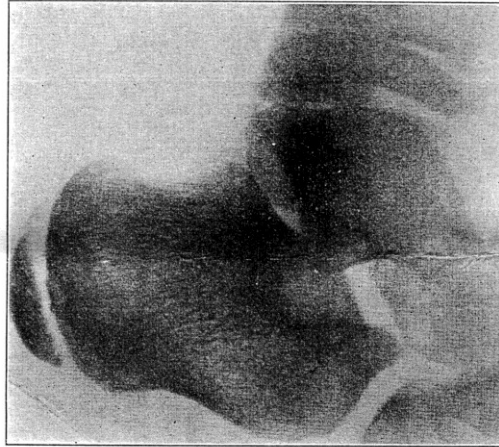


FIG. 9.—A boy, ten years of age; small centre of ossification, marked symptoms, history of trauma; note spurs on back of os calcis.

earlier epiphyseal development than underdeveloped children, or even normal sized children of the same age.

In order to show a characteristic series of the development of the epiphysis of the os calcis I had a number of x ray photographs taken of children of about the usual size for their years, with normal feet. These x ray pictures may be studied in the cuts accompanying this article. The epiphysis showing the inflammatory reaction may also be seen and compared with the normal ones of the opposite foot of the same child, taken at the same time (see Figs. 1 to 16 inclusive).

CASES.

CASE I. Girl, aged seven years, weight seventy-two pounds. Had had trouble with both heels for six months. No cause known. Pain in heels and disinclination to walk, especially on first getting up in morning. Heels, tender and limp. Some swelling about posterior portion of os calcis. Child well over weight for years and very active. She was relieved of this condition for a year by

<sup>2</sup>Rotch, *Röntgen Ray in Pediatrics*, 1909.

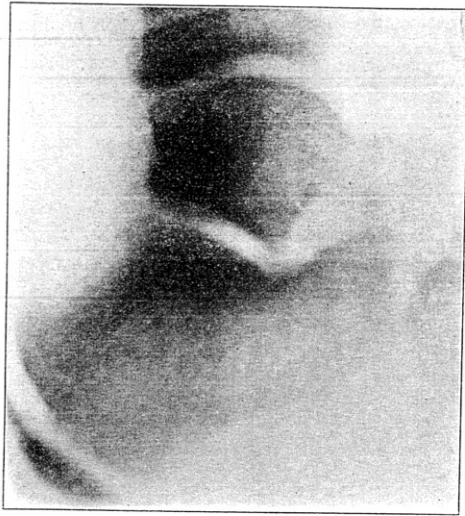


FIG. 10.—Boy, ten years of age, usual size; note large centre of ossification, normal.

raising the heels of her shoes, removing the counters from them, and giving her an inside pad of sponge rubber. A year later, after a period of considerable activity, the left heel began to trouble her. At this time the examination showed considerable thickening about the region of the epiphysis of the os calcis, and the epiphysitis was demonstrated by an x ray picture (see Fig. 6, compare with Fig. 5). Weight then eighty pounds.

The treatment at this time was as follows: A Thomas heel was applied with the whole heel of the shoe raised. Hot and cold soaking was ordered for a week, and later the heel was strapped with adhesive plaster, and rubber heels were ordered for the shoes. The recovery was then rapid under this protective régime.

CASE II. Girl, aged twelve years, large for age and very active. Used to wearing rubber soled "sneakers" with no heels, and low pumps with low heels. Complained of pain in left heel on walking. Very much worse after active use. Examination showed moderate thickening about epiphysis of os calcis on left. X ray pictures were taken of both feet. Compare Fig. 13, which shows epiphyseal enlargement, and Fig. 14, which shows normal foot. Foot was moved slightly in taking the x ray picture, so that the outlines are slightly indistinct.



FIG. 11.—Girl, eleven years of age, atrophy of bone from plaster bandage; normal size of child; note epiphyses almost united.

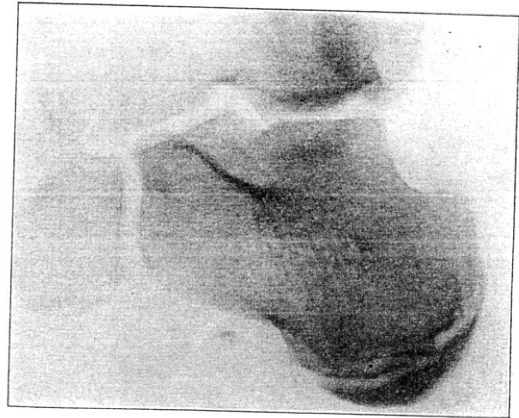


FIG. 12.—A boy, twelve years of age; note normal epiphysis having developed by two centres of ossification.

This case was treated as follows: The counters were taken out of her shoes, the heels were raised, and she was made to wear a pad of sponge rubber inside the heel of the shoe. Under this treatment she was well in about six months.

CASE III. Girl, aged twelve years. Duration three

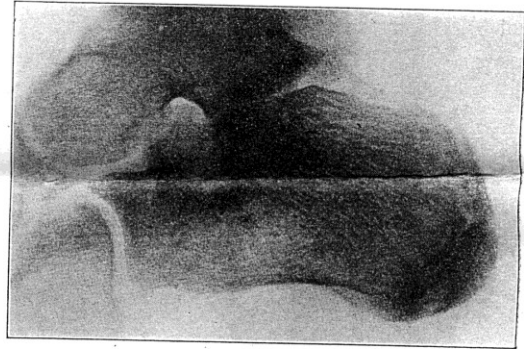


FIG. 13.—A girl, twelve years of age, large for her age; note large epiphysis; compare with Fig. 14, same case.

years. Tenderness and thickening about posterior portion of os calcis. No limp. X ray picture shows a practically normal epiphysis, which has developed by two centres of ossification (see Fig. 15).

CASE IV. Boy, aged ten years, normal size for age. History of injury to heel. Right heel considerably thick-

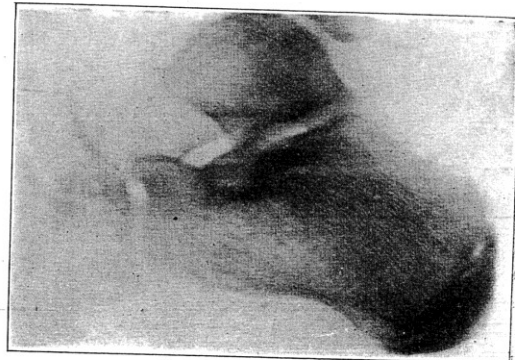


FIG. 14.—Normal foot of girl, twelve years of age, shown in Fig. 13.



ened about region of os calcis. Motion limited in dorsal flexion. Walks with limp. Fig. 9 shows a very small centre of ossification, without the usual characteristic signs, as evidently the centre of ossification had not developed sufficiently. The heel was strapped, which gave relief.

CASE V. Boy, aged six years, usual size. History of



FIG. 15.—Girl, twelve years of age; normal development by two centres of ossification, not a fracture.

injury to heel five weeks before coming to hospital. Right foot showed a thickened and swollen condition about posterior portion of os calcis. X ray picture showed no centre of ossification of epiphysis. See Fig. 2. These symptoms were relieved by strapping the heel, and by raising the heel of the shoe and removing the counter.

There are other similar cases which could be detailed, but the foregoing ones show sufficiently the symptoms, signs and treatment at different ages.

TREATMENT.

The treatment is usually simple, easily applied, and carried out. There are two indications to be met, namely, to relieve the strain on the tendo Achillis, and to prevent undue weight bearing on the heel.

For the purposes of relieving the tendo Achillis,



FIG. 16.—Girl, twelve and a half years of age, ossification complete.

which is attached in part to the epiphysis, the heel of the shoe is raised one quarter to one half inch, and the stiff counter of the shoe is removed to prevent any pressure. Strapping the heel with several vertical strips of narrow adhesive plaster, extending around the heel and well up the leg on either side gives great relief and support. If there is much element of pronation present an eighth inch lift is put on the inner edge of the heel to tip the foot out slightly.

To prevent pounding of the heel in walking, a rubber heel is fitted to the shoe, and a pad of sponge rubber is put inside the heel of the shoe to make a soft elastic pad on which the heel may strike. In connection with these procedures hot and cold douches applied daily, electric light baking, and rest are of great additional help.

PROGNOSIS.

The duration of the condition varies greatly. There may be a complete cure in a few weeks, but more often the condition persists for several months and may recur at a later period of growth before puberty, following overuse or injury under unfavorable circumstances. Ultimately, however, the condition is cured by the fusion of the epiphysis with the os calcis.

CONCLUSIONS.

1. Apophysitis of the os calcis is not an unusual condition.
2. It may occur from muscle strain in rapidly growing children.
3. It may occur less frequently from direct trauma, but presents then the same clinical picture.
4. It never occurs after puberty.
5. The treatment is rest and protection.
6. The cure in all cases may be arrived at eventually.

234 MARLBOROUGH STREET.

EYE TRAINING FOR THE CURE OF FUNCTIONAL MYOPIA.\*

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In functional myopia the eye is adjusted for near vision without permanent elongation of the optic axis, as is found in true myopia. The defective vision is usually improved by concave glasses. The diagnosis has been made with the aid of the ophthalmoscope. By the direct method the details of the fundus were seen momentarily with clearness by the normal eye. Many cases have been recognized by retinoscopy. The local and prolonged use of sulphate of atropine has not always relieved functional myopia.

*Occurrence.* Functional myopia occurs universally. Newborn children are afflicted. It was found in varying degrees in more than ten thousand school children, and was responsible for nearly all the eye pain, asthenopia, headaches, defective vision, irritability, not only of the children, but of the teachers as well. It was found frequently among

\*Read before the Medical Association of the Greater City of New York, January 15, 1912.