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LAMBRINUDI'S OPERATION FOR DROP-FOOT

BY

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Lambrinudi's ingenious operation for drop-foot has not gained the popularity it deserves.

In 1927 *Lambrinudi* described a rather complicated "new operation on drop-foot". He later developed a simplified method which he published in 1932.

In 1937 *Fitzgerald & Seddon* reported a serie of 24 cases. Allthough their results were promising we have not found other publications on the subject apart from *Hart*'s introduction of the method to the American orthopaedic surgeons in 1940. As to our knowledge the operation has not been used in the Scandinavian countries so far we should like to introduce it now.

"The underlying idea", *Lambrinudi* writes, "is a combination of two time-honoured general principles of orthopaedic surgery. I. the best method to stabilize a joint without ankylosing it is to allow it to lock in a normal manner. II. removal of a wedge at the right side is often the best way to correct a bony deformity".

The principle of Lambrinudi's "method of correcting an equinus deformity at the sub-astragalar joint" is, when the foot is in complete equinus the posterior tubercle of the talus abuts against the tibia and the foot cannot drop further. Therefore with the talus kept in this position and the subtaloid part of the foot lifted up into a desired position the discomfort of a drop-foot is eliminated and still some impotant movements in the ankle-joint are preserved.

The surgical procedure is showen in fig. 1: an atypical triple-arthrodesis is performed by removing a wedge of the talus and the shaped anterior "beak" of the talus is locked into a horizontal notch in the naviculare bone.

Fig. 2 shows radiograph of the foot immediately after operation.

It is most advisable to take a preoperative radiograph of

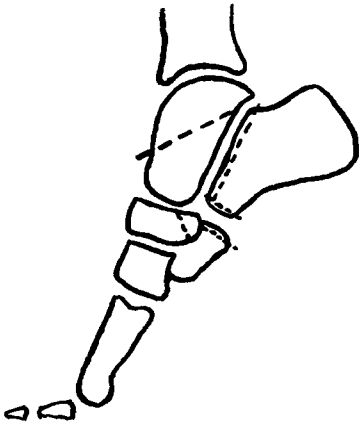

Fig. 1a.

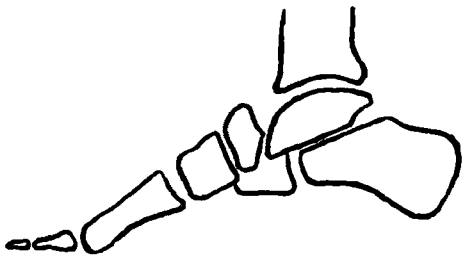

Fig. 1b.

Figs. 1 a and b
illustrate the idea of Lambrinudi's operation on drop-foot.

Fig. 1 a:
the foot is fully plantar flexed. The posterior tubercle of the talus abuts against the tibia. The stippled lines indicate how much of the bones should be removed to obtain the desired position of the foot, which is shown in fig. 1 b.

the foot in complete equinus in order to estimate the size and shape of the talar wedge to be removed.

Lambrinudi devised his operation for a drop-foot with an active calf muscle. But as *Fitzgerald & Seddon* have pointed out it is also of value in the treatment of a flail foot, of the equinus-foot of hemiplegia where the muscles are in imbalance and of "old" club-feet where incongruence of the articular surfaces of the ankle-joint makes it difficulty or impossibly to tilt the talus back into its normal position. The

operation might be unwise with some shortness of the extremity and if the patient still has to wear long supporting irones due to other muscle paralysis.

Since 1945 the operation has been performed on 23 feet at Orthopaedic Hospital, Århus.

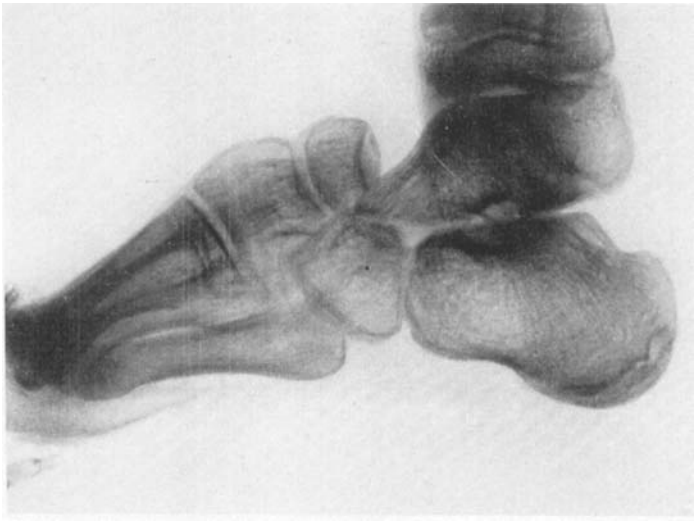

Fig. 2
shows the condition immediately after operation. The calculated wedge of the talus has been removed, and the beak-shaped anterior part has been locked into a slot in the navicular bone. The join surfaces between the os calcis and the astragulus and between the os calcis and the cuboid bone have been removed.

The 23 feet were: 14 of poliomyelitic paralysis (12 with drop-foot and an active calf muscle, 2 with a flail foot), 2 of lesions of the peroneal nerve, 1 of spastic hemiplegia, 4 of "old" club feet, 2 of equinus deformities (1 of muscular dystrofi and 1 of acrocalcinosis of the skin and subcutis).

The youngest patient was 12 years old, the oldest 39 years.

The post-operative course was un-eventfull apart from one case, a 39-years old female polio-case who had a mental disturbance treated in a lunatic asylum. She developed a "post-traumatic dystrofi".

In all other cases radiographs showed sound fusion within 3-4 months.

We believe it is fair to say that when the operation had been done with the correct technic the intended results were obtained: the foot did not drop and some movement was

Fig. 3
shows superimposed radiographs of the foot before and after operation to illustrate how the foot is "lifted" at the sub-taloid joints.

retained at the ankle-joint. Fig. 3 shows x-rays before and after the operation.

3 patients had still too much equinus. The method can not be blamed. The surgeon had obviously not removed an adequate wedge of the talus. This should be avoided by a study of the radiograph.

It is too early to give any final results. But our experience agree with those of *Fitzgerald & Seddon*, that this method is superior to other operations as pan-taloid arthrodesis, tenodesis and boneblock operations when used on sound indications and with the correct technic.

It remains to be seen how the ankle-joint will resist a continued strain. An osteoarthritis may develop and may be some cases with a better defined posterior tubercle of the talus will show a more lasting good result.

SUMMARY

Lambrinudi's operation for drop-foot is described. Since 1945 the method has been used on 23 feet: 14 with sequelae of poliomyelitis, 2 with lesions of the peroneal nerve, 1 with a spastic hemiparesis, 4 with "old" club-feet, and 2 with equinus deformities. The preliminary results are promising.

RESUME

Il est question de l'opération de *Lambrinudi* pour le „drop-foot". Depuis 1945, cette opération a été pratiquée sur 23 pieds: 14 souffrant des suites de polimyélite, 2 avec lésion du nerf péronier, 1 avec hémiparésie spastique, 3 avec pied-bot de longue date et 2 avec déformité de la pointe du pied. Les résultats provisoirement obtenus sont prometteurs.

ZUSAMMENFASSUNG

Es wird über die *Lambrinudi*'sche Operation bei „drop-foot" berichtet. Die Operation wurde seit 1945 an 23 Füssen ausgeführt; 14 mit Folgen einer Poliomyelitis, 2 mit einer Läsion des N. peronaeus, 1 mit Hemiparesis spastica, 4 mit alten Klumpfüssen und 2 mit Spitzfussdeformitäten. Die vorläufigen Ergebnisse sind günstig.

REFERENCES

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DISCUSSION

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