

ARTHRODESIS OF THE HIP

A method allowing weightbearing and walking postoperatively

By

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Hip fusion for unilateral disabling hip lesions has for a long time been accepted as one of the best procedures to restore working capacity particularly in heavy workers. The ankylotic hip permits an excellent gait especially in younger individuals with a mobile lumbar spine, and it is usually also rather well suited for the ordinary sitting position provided that the hip is ankylotic in the functional best position. In our experience *the functionally best position is about 25 degrees flexion, 2 to 5 degrees adduction and a few degrees external rotation.*

The disadvantages of the hip fusion have been:

1. Long lasting recumbency with one or both hips immobilized in a big plaster spica.
2. A rather high frequency of pseudarthrosis after the operation.

To avoid or minimize these disadvantages we have tried to develop a method giving so complete internal fixation that:

1. The patient could be let out of bed and allowed walking a few days after the operation.
2. A short spica not extending below the knee is sufficient for external immobilization allowing free mobility of the knee and ankle.
3. The patient can take care of himself and be active during the time of convalescence.
4. The frequency of pseudarthrosis could be reduced.

The method of Watsen-Jones, using the long Smith-Petersen nail, yields a good fixation but not strong enough to satisfy the requirements stated above. This new method consists of a "two-point" fixation using

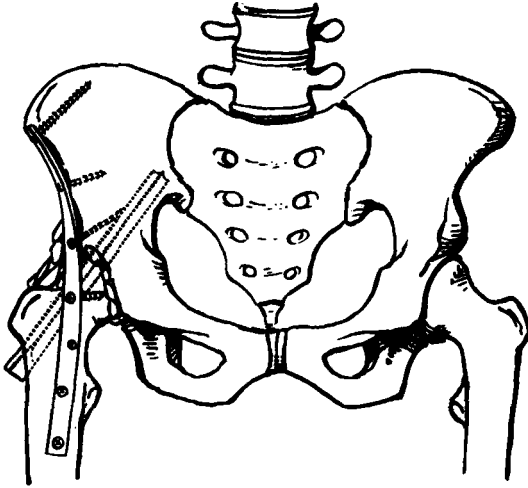


Fig. 1.

a long Smith-Petersen nail (Watson-Jones) driven into the ileum up to the sacro-iliac joint and in addition a strong Vitalium plate individually shaped during the operation and placed on the anterior surface of the femur extending upwards along the anterior edge of the ileum including *spina ilei sup.* The screws through the plate into the ileum entering from the anterior edge of the ileum are placed *between the internal and external lamina* of the ileum. The hold obtained in this way is a very good and stable one.

The fixation between the femur and the pelvis is so complete that the patient can be placed back in bed and be allowed out of bed walking and weightbearing without any plaster cast. The patient feels, however, more secure with a cast, and the nursing staff find the postoperative treatment more convenient with a cast, so that the patient is fitted with a short plaster spica just after closing the wound. This short spica allows free mobility of the knee and ankle joint on both sides. *The patient is let out of bed in the course of the first 3-4 days after operation allowing walking and weightbearing.*

The incision used is an anterolateral starting just above the *spina ilei ant. sup.* extending downwards laterally slightly posteriorly curved placed a little anteriorly to the greater trochanter and extending far enough down on the lateral side of the femur to allow driving in the Smith-Petersen nail. The tensor fascia lata is divided from the glutei muscles and retracted medially, and the proximal lateral part of vastus lateralis is separated from the upper part of the femur. In this way

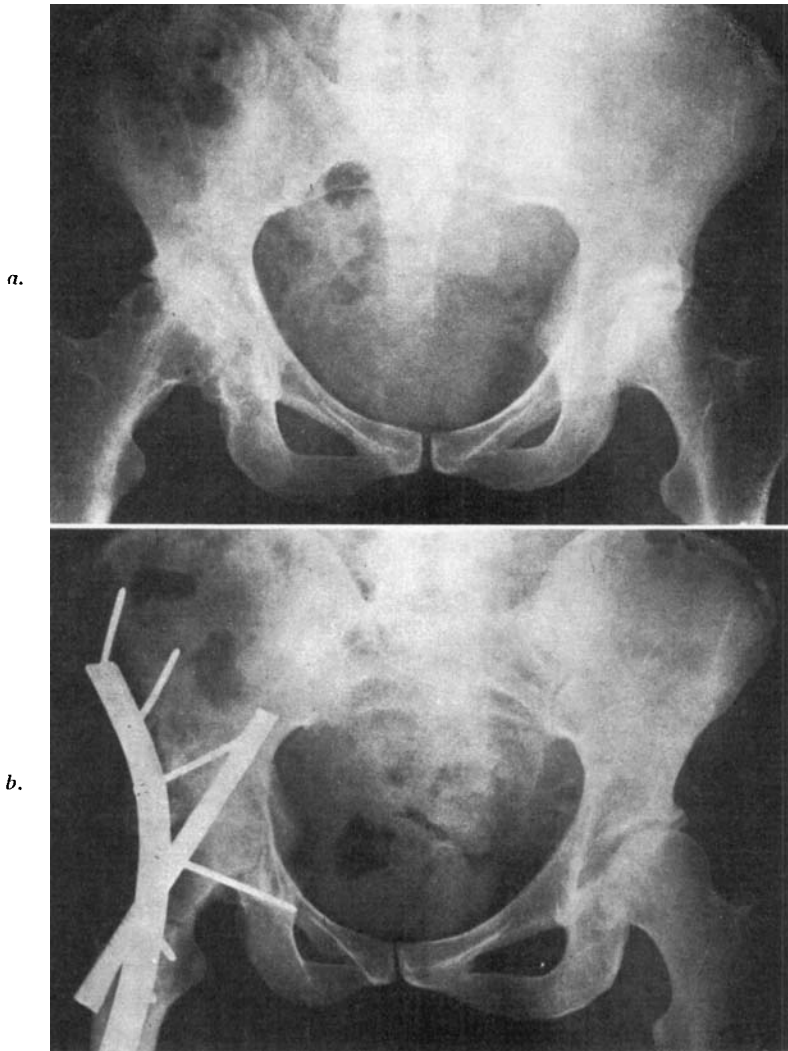


Fig. 2.

Osteoarthritis of the right hip.

a. Before operation.

b. 4 months after the arthrodesis. Walking and weightbearing started a few days after the operation.

the anterior lateral part of the ileum, the hip joint, the upper part of the femur with the neck and the greater trochanter are exposed. One disadvantage with this exposure is that the gluteal nerve branch to the

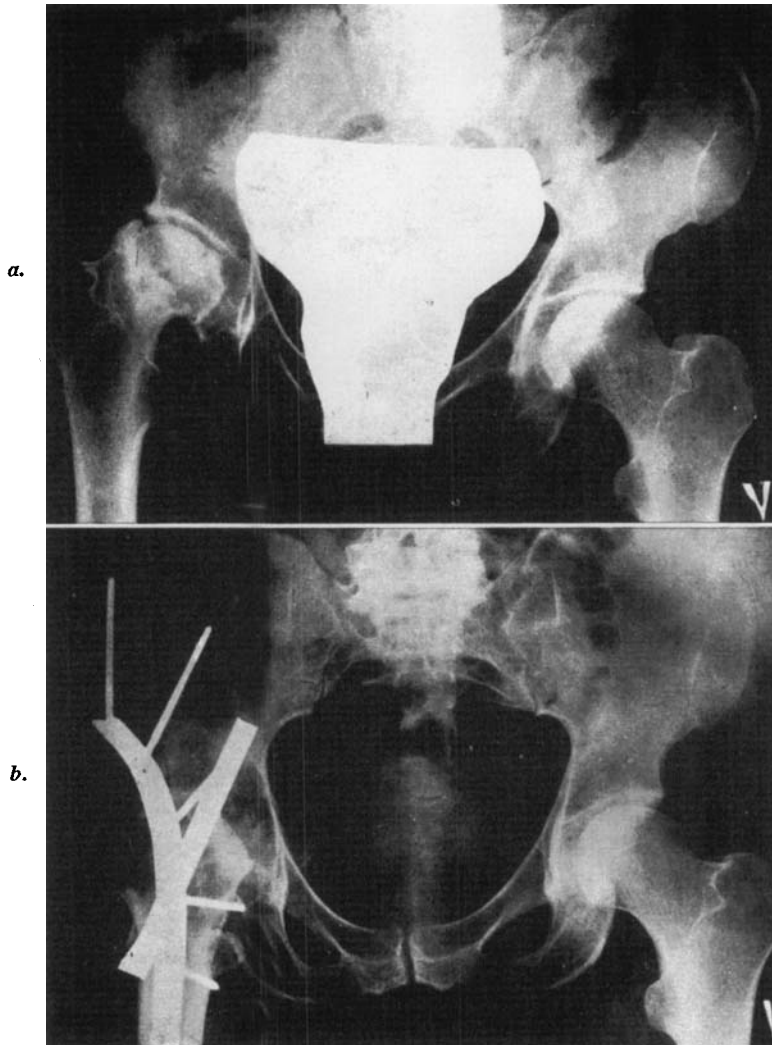


Fig. 3.

Post traumatic necrosis of the femoral right head.

a. Before operation.

b. 4 months after the arthrodesis. Walking and weightbearing started a few days after the operation.

tensor fasciae latae is sacrificed. The result is atrophy of this muscle in cases with no innervation from the femoral nerve to the tensor. After arthrodesis of the hip the function of the tensor fasciae latae is, how-

ever, rather unimportant. In most cases an ordinary internal resection of the hip joint should be done, but in cases with a narrow joint space an internal resection is unnecessary.

By means of this method it is rather simple to do a hip fusion also after an unsuccessful intramedullary and Judet prosthesis. Bone material to fill up the gap between the remaining part of the neck and the acetabulum can be taken from the trochanter region, from the iliac crest and/or from the bone-bank.

The short spica is worn for 4 months during which the patient is allowed weightbearing and the usual social activities at home or at a convalescent home. After that "the lumbar spine gait" is trained.

Until now 93 hips have been fused by means of this new method. The first 41 before Dec. 1960 have been followed-up. All of them healed completely without developing pseudarthrosis, but in 5 cases the short hip spica had to be worn for more than 4 months. There was no death, no serious infection, and no other bad complication. All of them had been given anticoagulation treatment prophylactic from the day of operation. (After this follow-up we had two infections which in one case required removal of the nail, and two fractures of the femur some time after the plaster spica was removed). Among the 70 preceding hip arthrodeses fused by means of various other methods, 7 resulted in pseudarthrosis.

SUMMARY

A new method for hip fusion is described. The internal fixation in this method is strong enough to allow weightbearing and walking in the postoperative period starting a few days after the operation wearing only a short spica allowing free mobility of the knee joint. The internal fixation consists of a long Smith-Petersen nail and in addition a strong vitalium plate shaped individually during the operation, placed anteriorly, and fixed to the anterior edge of the ileum and the anterior side of the femur. The short spica is worn for 4 months with the patient sharing in the usual social activities. The follow-up of the first 41 operated upon in this way shows very satisfactory results.

RESUME

Une nouvelle méthode de fusion de la hanche est décrite. La fixation interne par cette méthode est assez forte pour permettre la charge du corps et la marche dans la période post-opératoire qui commence peu de

jours après l'opération en portant seulement un court spica permettant la mobilité de l'articulation du genou. La fixation interne est effectuée au moyen d'un long clou Smith-Petersen et d'une forte plaque de vitalium modelée individuellement pendant l'opération, placée antérieurement et fixée au bord antérieur de l'os iléum et au côté antérieur du fémur. Le court spica est porté pendant une période de quatre mois, le malade prenant part à ses activités usuelles.

L'observation suivie des 41 premiers cas opérés selon cette méthode ont montré que des résultats très satisfaisants avaient été obtenus.

ZUSAMMENFASSUNG

Eine neue Methode der Hüftarthrodese wird beschrieben. Die innere Fixation bei dieser Methode ist stark genug, um das Belasten und Gehen in postoperativen Periode zu gestatten. Der Patient beginnt damit nur wenige Tage nach der Operation mit einer kurzen Gipshose, die freie Beweglichkeit des Knies erlaubt. Die innere Fixation besteht aus einem langen Smith-Petersen Nagel mit Hinzufügung einer starken Vitaliumplatte, die individuell während der Operation geformt, vorne angelegt und am vorderen Rande des os ileum und an der Vorderfläche des Femurs befestigt wird. Die kurze Gipshose wird 4 Monate getragen während welcher Zeit der Patient seinen gewöhnlichen Beschäftigungen nachgehen kann. Die Nachuntersuchung der ersten 41 Patienten, die in dieser Weise operiert wurden zeigt ein sehr zufriedenstellendes Ergebnis.