

HIP ARTHRODESIS BY ILEOFEMORAL NAILING

K. Karchinov

Key-words: hip arthrodesis – ileofemoral nailing – operative method – advantages

There exist different methods for hip joint arthrodesis: intraarticular, extraarticular, and mixed. They require a longlasting postoperative plaster immobilization by lumbo-leg plaster.

Arthrodesis by ileofemoral nailing treats the hip joint similarly to the case of cross fracture between ileal and femoral bones. Kuntscher's nail passes from crista iliaca along between its two cortical layers directed to acetabulum centre and then continues between trochanter major and the medullar channel of the femoral bone.

Dwyer (1964) in 1965 reports about a "new method for hip arthrodesis". Onji et al. (1965) reports "a new method of hip arthrodesis by using of an intramedullary nail". Cass and Dwyer recommend drilling for hip arthrodesis. In 1970, Karchinov creates "an apparatus-guide for hip arthrodesis by metal osteosynthesis" (fig. 1) and, later on he reports 15 operated patients with hip arthrodesis by ileofemoral nailing (2, 3, 6).

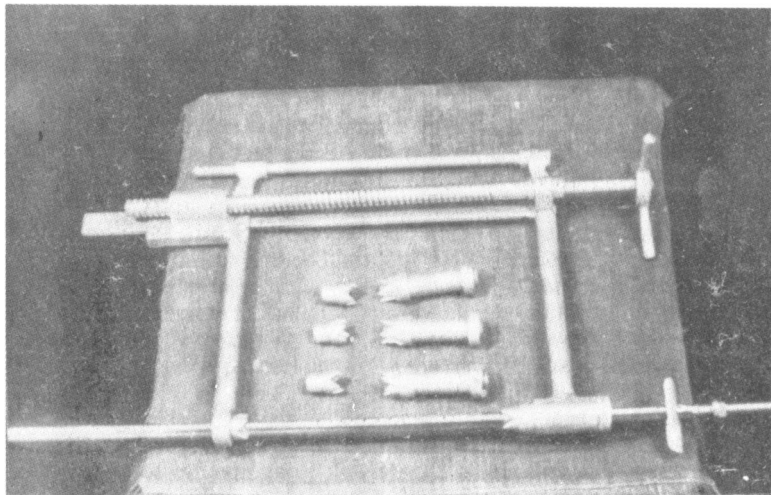


Fig. 1. The apparatus-guide for hip arthrodesis by metal osteosynthesis.

We note the following advantages of this method of hip arthrodesis:

1. An excellent internal fixation of hip joint is realized by Kuntscher's nail which does not require plaster postoperative immobilization.
2. Immediately after operation, loading of hip joint operated is started by walking.

3. Knee joint as well as other lower limb joints do not remain rigid.
4. Hip joint fusion is realized for a shorter period of time.
5. Operative method is very well sustained by the patients, and especially by the senile ones.
6. Operation creates some femoral medialization which improves stability.

The apparatus-guide orientates the nail from crista iliaca towards the superior part of acetabulum thus determining minimal flexion angle and neutral position for both abduction and adduction with hip arthrodesis. The level below the apex of the transversal process of the fifth lumbar vertebra is singled out as an entrance orifice in the area of crista iliaca.

Arthrodesis is carried out under general anaesthesia. The patient lies on his healthy side. Two cuts are made. The first begins below spina iliaca superior towards trochanter major and then continues down on femur being approximately 15-20 cm long. Muscle disinsertion from the major trochanter is performed. Capsulectomy is made and femoral head is luxated. Acetabulum's cartilage tissue is cleaned out. Commonly, its internal cortical layer is reached. If head lies higher as in the case of high congenital luxation arthrodesis is made in the normal acetabulum by head bringing down by means of an "apparatus for reposition of luxated femoral head" (Karchinov, 1971). In the region between trochanter and collum a channel is formed where the nail will pass through. Femoral head is commonly resected either partially, or completely.

The second cut is in the region of crista iliaca. After bone revealing spina iliaca posterior is palpated lying near to processus spinosus of the fifth lumbar vertebra.

Then the "apparatus-guide" is put in in order to orientate the nail from crista iliaca towards the upper central part of already formed acetabulum. After that the proximal femoral part is put into acetabulum and nail passes through the orifice medially from trochanter in femoral medullary channel. Then spongiosis of resected head can be placed into acetabulum in the form of bone fragments if there remains some unfilled space.

Results and Discussion

In the present work we analyze a total of 37 patients operated during the period 1969-1985. There are 24 females and 13 males. Arthrodesis is carried out with 20 right and 17 left hip joints. One precondition is that the other joint of one and the same patient is normal. Unilateral arthrodesis of the hip joint is required by the following diseases: high unilateral congenital iliac luxation (with 14 patients); severe form of coxarthrosis, coxarthrosis with subluxation or after Porges' disease (with 9 patients); poliomyelitis resulted in complete paralysis of the musculature of the hip joint (with 5 patients); presence of pseudoarthrosis of femoral collum (with 5 patients); untreated fracture-luxation of the hip joint (with 3 patients), and state after tuberculous coxitis with one patient.

In 4 patients with high congenital iliac luxation of the hip joint after bringing down of the head and its arthrodesis as a second operation surgical correction of crural valgus was required.

The results from hip arthrodesis in these 37 patients can be summarized as follows: arthrodesis was done uneventfully and bone knitting together occurred after 4-6 months in 31 patients. Nail extraction followed one year after operation. Nail broke at arthrodesis level and two new nails had to be put in with 4 patients. Osseous fusion occurred after 5-8 months. A poor result was obtained with 2 patients showing lack of bone fusion in the region of hip joint. The reason was unstable osteosynthesis with incorrect centred nail towards acetabulum. In these cases nail has passed through the external side of the acetabulum near to the limb.

Hip arthrodesis by iliofemoral nailing is recommended as method of choice with corresponding indications for operative hip joint immobilization.

REFERENCES

1. Карчинов, К. Апарат-водач за артродеза на тазобедрена става чрез метална остеосинтеза. Рационализация № X, 1746/7.XII.1970 г. — 2. Карчинов, К. *Ортоп. и травматол.*, 1971, № 4, 226–231. — 3. Карчинов, К. *Ортоп., травматол. и протез.*, 1975, № 3, 72–75. — 4. Cass, C. A., A. F. Dwyer, *J. Bone Joint Surg.*, 51-B, 1969, No 1, 135. — 5. Dwyer, A. F. *Australia and New Zeal. J. Surg.*, 34, 1964, 105. — 6. Karchinov, K. *Rev. Cub. cirugía*, 3, 1972, 231–239. — 7. Onji, Y., et al. *J. Bone Joint Surg.*, 47-B, 1965, 690.

**АРТРОДЕЗ ТАЗОБЕДРЕННОГО СУСТАВА ПОСРЕДСТВОМ
ПОДВЗДОШНО-БЕДРЕННОГО ПРИГВОЖДЕНИЯ**

К. Карчинов

РЕЗЮМЕ

Артродез тазобедренного сустава проводится посредством подвздошно-бедренного пригвождения, при котором этот сустав принимается как поперечный перелом между подвздошной и бедренной костями, сингезируемыми гвоздем Кюнчера. Преимущество этого метода состоит в том, что не приходится накладывать гипсовую иммобилизацию с охватом поясницы и всей ноги, соседние суставы остаются свободными, а больной хорошо переносит операцию, он может вставать и ходить сразу же после ее проведения.

Для осуществления операции нами создан „апарат-водитель”, который в состоянии направлять гвоздь от гребня подвздошной кости ко дну вертлужной впадины, после чего он входит между большим вертелом и шейкой и дальше – в медуллярный канал бедренной кости.

За период с 1969 по 1985 г.г. указанным способом прооперированно 37 больных. Артродез тазобедренного сустава осуществляется в необходимом положении и слияние костей происходит в более короткие сроки. У 35 больных артродез осуществился без осложнений и слияние произошло за 4-6 месяцев после операции. У двух больных операция кончилась неуспешно в связи с тем, что гвоздь был неправильно направлен в подвздошную кость. Гвоздь Кюнчера удаляется легко из области гребня подвздошной кости через год после проведения операции.