

THE TREATMENT OF TRAUMATIC LEG PSEUDARTHROSIS

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The problem of treating traumatic false joints is not fully solved as yet. Despite the optimistic prognoses of some authors about a considerable decrease in their incidence, made not so long ago (Kormilov, Ollier and others), they are still encountered as complications of the conservative and operative management of fractures. According to data submitted by various authors (Gudushauri, Balakina, Chaklin, Tkachenko etc), their incidence ranges from 0.4 to 1.6 per cent. Traumatic false joints of the leg are most frequently met with — 50.6 per cent after Chaklin and Rudy, 45.3 per cent — after Tkachenko. Their treatment causes justified interest since the incidence of leg fractures is steadily augmenting.

Over a period of 20 years, a total of twenty-six patients with traumatic leg pseudarthrosis, of which 19 men and 7 women, underwent treatment in the clinic of orthopaedics and traumatology, Medical Faculty — Varna. According to etiological factors leading to false joint development, on the basis of Monticelli's classification, they are distributed as follows:

I. Due to mechanical factors mainly:

- 1) movement of fragments owing to inadequate immobilization — three patients;
- 2) diastasis subsequent to excessive traction — three patients. In this group distraction between the fragments occurred because of the greater weight applied and undue X-ray check up;
- 3) early weightbearing with angulation of the leg and improper kinesi-therapy — two patients.

II. Due to biological factors mainly:

- 1) fracture infection — in eight patients with open crural fracture and soft tissue crushing, wound infection developed with continuous purulent secretion, hardly lending itself to antibiotic control. Final outcome — pseudarthrosis.

III. Factors with combined biological and mechanical action:

1. heavy comminution of the fragments — two patients;
2. bone substance loss with fragments slipping out of the wound — five patients;
3. soft tissue interposition — two patients.
4. using an excessive number of internal fixation devices made of heterogeneous materials — two patients.

According to our case material, open fractures with untidy wound canals, slipping out of bone fragments, and heavy infection are the most frequent causes of pseudarthrosis development. On the basis of clinical and operative findings, our cases of traumatic false joint are classified according to Kopchev, as follows:

- a) stable false joints without diastasis between the fragment — 16 patients;

b) nearthrosis — 5 patients;

c) bone defects up to two centimeters — 2 patients, and more than two centimeters — 4 patients.

In treating traumatic leg pseudarthroses, a number of important principles such as exact and rigid fixation of the fragments, sound biomechanics, preservation and stimulation of viability, or the so-called osteogenetic potential, were strictly abided to. The listed below conservative and operative methods of treatment were used:

I. Conservative method:

1) Continuous plaster-cast immobilization and weightbearing of the limb through ambulation, with simultaneous local and systemic application of anabolic preparations and autohemotherapy — two patients.

II. Operative methods:

1) Boychev's procedure using a rectangular tibial graft together with periosteum and endosteum — two patients.

2) Albee's operation — three patients.

3) Method of Hahn-Poirier — four patients with substantial bone substance loss.

4) Bone graft from the fibula of the healthy leg, inserted intramedullary, in conjunction with osteogenetic material, supplied by a cancellous homograft — three patients with good outcome.

5) Intramedullary osteosynthesis using Küntscher nails — four patients. In three cases of this group the treatment was combined with bone autoplasty, and in one — with decortication after Judet.

6) Fixation with compression plates — two patients.

7) Application of apparatus for extrafocal (external) compression and distraction after Ilizarov, Gudushaury etc — eight patients with very good outcome. Four of the patients were with infected false joints. In case of need fibular osteotomy was also resorted to.

In cases of pseudarthrosis lacking adequate biological response, local administration of anabolic preparations in conjunction with vitaminotherapy was embarked on. Patients with infected pseudarthrosis were subjected to treatment with broad spectrum antibiotics, locally and parenterally, in compliance with the results of the antibiogram. In 25 patients the treatment resulted in complete healing. In three instances re-operation was necessary. One of the latter group rejected reoperation, and was therefore fitted with an orthopaedic brace (orthesis). Traumatic false joints of the leg constitute a severe complication, leading to prolonged disability and sick leaves. This is attributed first and foremost to errors made in the course of treatment, such as inadequate reposition and immobilization, infection, improper choice of operative procedure.

The management of traumatic false joints of the leg at the modern stage of development of orthopaedics and traumatology yields favourable results in most of the cases. The utilization of numerous devices for compression osteosynthesis, the skilled application of biological stimulation with cancellous tissue, anabolic preparations, vitaminotherapy accomplished in clinical environment, contribute greatly to the final success.

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О ЛЕЧЕНИИ ТРАВМАТИЧЕСКИХ ПСЕВДОАРТРОЗОВ ГОЛЕНИ

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РЕЗЮМЕ

За 20-летний период в Клинике ортопедии и травматологии — Варна находились на лечении 26 больных с травматическим псевдоартрозом голени, среди которых 19 мужчин и 7 женщин.

Самыми частыми причинами образования псевдоартроза являются открытые переломы с загрязнением раневого канала, выпадением костных отломков и тяжелыми инфекциями.

Консервативное лечение первичной гипсовой повязкой применено у двух из больных. Оперативное лечение применено: по методу Бойчева — у двух больных, по методу Олби — у трех, по методу Ган-Поарье — у четырех, костным трансплантатом от малоберцовой кости, вставленным интрамедуллярно, в комбинации с остеогенетическим материалом из гомоспонгиозы — у трех больных, интрамедуллярный остеосинтез с декортикацией по Жуде — у четырех больных, компрессионной пластинкой — у двух больных и внеочаговым компрессионным остеосинтезом по Илизарову—Гудушаури — у восьми больных.

Лечение 25-и из всех больных закончилось полным выздоровлением. У трех из них пришлось прибегнуть к повторному оперативному лечению, Один больной отказался от реоперации и ему был сделан ортопедический тутор.