Полисегментарные восстановительно-удлиняющие операции патологически измененных костей по Илизарову

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Polysegmental restorative - elongated operations by Ilizarov, on pathological changed bone

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Резюме: При одновременном лечении нескольких вариантов костной патологии различной локализации мы использовали методы чрескостного остеосинтеза по Илизарову. Мы последовательно придерживались схемы лечения, применяя методы, разработанные в РНЦ «ВТО» имени Илизарова и используя аппарат Илизарова. Мы проводили лечение 102 случаев патологии нескольких костных сегментов, главным образом, бедра и большеберцовой кости. Чаще всего это были ложные суставы с замедленными сращениями или несращениями, с инфицированием или без него, с деформацией или без деформации смежного сегмента, с разницей в длине сегментов и укорочением или без этого, с деформацией стопы или без нее.
Процент костной консолидации : 87-93%;
Процент коррекции деформации: 81-91%;
Процент выравнивания длины: 73-89%.
Ключевые слова: полисегментная деформация, патология кости, чрескостный остеосинтез, метод Илизарова.

Summary: We have used numerous methods of transosseous osteosynthesis by Ilizarov in treatment of pathologically changed bones with different localization simultaneously. We have consistently followed the therapeutic schema, applying the methods which has been devised at the Ilizarov School in RNC RTO and making use of the original construction of the Ilizarov apparatus. In our hospital we have treated 102 cases with different pathological changed bones of more bone segments. Mostly of the femur and tibia. Most frequently: false joints, delayed or non union, with or without infection, with or without deformity of the neighboring bone segment, with or without segmental discrepancy and shortening, with or without the foot deformity.
Percent of the bone consolidation : 87-93%;
Percent of deformity correction : 81-91%;
Percent of equalization : 73 - 89%.
Keywords: Polysegmental deformity, Pathological changed bone, Transosseous osteosynthesis by Ilizarov

Etiology:

1. Infected and non infected pseudoarthrosis on two bone segments:
femur and tibia 4 tibia + tibia 6
2. Delayed union with or without infection
femur and tibia 5 tibia + tibia 9
3. Posttraumatic deformity of one segment with pseudoarthrosis of the neighboring segment with infection 3 without infection 10
4. Pathological fracture, with bone deformity 4
5. Pseudoarthrosis of the tibia with foot and ankle deformity 12
6. Pseudoarthrosis of one segment + bone deformity of neighboring segment + foot deformity 7
7. Situation after osteomyelitis with or without deformity or foot deformity 39
8. Large bone defects with foot deformity 3

Methods:

The problem of rehabilitation treatment of the patients with Polysegmental pathology of the long bones in spite of its many years studying stays the same till today. A large percentage of unfavourable results after using traditional surgery, was a reason for research in the introduction of more efficient method of treatment. From this a growing interest of theorist and clinicist is seen for the new trend of restorative surgery being developed by the Ilizarov School. The essence of the developed treatment techniques now consists in the guided modelling of tissue structures under conditions of transosseous osteosynthesis compression - distraction osteosynthesis by Ilizarov apparatus.

The basic theoretical postulate on which our entire work has been based is: Dedifferentiation of polyblast cells under the influence of cornpressive and tensile forces (in rigid osteosynthesis conditions) into the osteogenic cells.

Tactics of treatment: Individual, dependents on etiology, tissue conditions and function of the adjacent joints. Used methods:

1. Compressive-distraction osteosynthesis

2. Compressive-distraction osteosynthesis -with

or without foot correction

3. Distraction osteosynthesis with or without foot correction

4. Distraction-compressive osteosynthesis

The stimulating influence of tension stress has allowed for the first time to:

• To elongate bone segment to desirable limits;

• To eliminate severe deformities;

• To model simultaneously bone shape;

• Substitute without grafting, large bone and soft tissues defects.

Results:

Discovered by Ilizarov, the tension stress effect of biological tissue stimulating the genesis, is widely used for formation of bone regeneration in the direction planned in advance and diverse in configuration and lengthen. The application of these techniques has raised the number of bloodless variants of transosseous osteosynthesis to 25%.

We have treated 102 cases with multiple complicated pathology of the long bones. The average time of the treatment was 197+- 25 days.

• Percent of bone consolidation on non infected pseudoarthrosis : 95%

• Percent of bone consolidation on infected pseudoarthrosis : 89%

• Percent of bone consolidation on non infected delayed union : 98%

• Percent of bone consolidation on infected delayed union : 92%

• Percent of bone consolidation on pathological fracture : 100%

• Percent of deformity correction : 85%

• Percent of foot correction : 95%

• Percent of equalization : 87%

• Percent of elimination of bone infection : 77%

We have treated 27 cases with open methods and 75 cases with closed methods. Blood supply and tissues are maximally spared during reconstruction , preserving the developed mechanism of their adaptation. This is the essence of the principle of preserving and assisting the favourable for reparative tissue regeneration.

Possible adverse effects:

• Superficial or deep wire infection,

• Edema or swelling, possible compartment syndrome,

• Joint dislocation or subluxation,

• Damage to nerves or vessels caused during insertion of the wire,

• Tissue necrosis during wire insertion,

• Persistent drainage after wire removal,

• Chronic wire osteitis,

• Joint contracture,

• Pressure necrosis at the wire tissue junction.

Conclusion:

The restorative bone -joint surgery based on the Ilizarov

principles and methods of transosseous osteosynthesis in treatment of complicated, multifocal and multisegmental bone joint pathology, is a dynamic development system of rehabilitation measures, founded on the complex optimal mechanico - biological conditions for reconstruction of damaged tissue structures and functions.

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ПАМЯТИ Г.А. ИЛИЗАРОВА

«На симпозиуме в Кургане Илизаров прочитал свой доклад, который принес ему не только признание, но и триумф. ...Не забуду никогда этот научный доклад… ...Когда Илизаров закончил, весь зал встал и молча аплодировал - более двухсот человек, среди них хирурги из 52 городов. "Перед нашими глазами революция в ортопедии и травматологии, — сказал об этом на обсуждении доклада профессор Флоренский из Костромы, — и это говорю я , участник войн, начиная с Первой мировой»

Божко Богданов
«Орбита»16.04.73 (Болгария)