

these patients. Conservative treatment becomes ineffective when the joint is destroyed by the arthritic process, reconstructive interventions are no longer possible, and the only effective therapeutic option is total knee arthroplasty.

The frequency of valgus deformity in gonarthrosis is 10%-20% from all patients with osteoarthritis, while the most common deformities are in varus, about 80%-85%. Currently, a lot of studies show that the use of the total knee prosthesis in gonarthrosis is the argood treatment; improvement of surgical techniques and of the quality of the last generation implants have increased viability of prostheses and the rate of positive functional outcomes. A knee prosthesis allows removing of the iliac syndrome in 90%, which improves the quality of life for these patients over a period of 15 years and longer.

Although gonarthrosis with valgus deformity is less often encountered, the total knee arthroplasty technique imposes some peculiarities due to the complexity of the lateral capsulo-ligamentar apparatus; the approach used; the bone stock deficiency; the alignment of prosthetic components; the difficulty of achieving an effective ligament balance due to laxity of the medial collateral ligament, ensuring the correct parallel movement and postoperative stability.

The issues of the treatment are influenced by several factors: careful selection of patients according to well-defined indications; use of contemporary prostheses; performing of the preoperative planning; following the contemporary surgical techniques; postoperative functional recovery.

Material and Methods

Our study includes the treatment of 67 patients with degenerative osteoarthritis of the knee with valgus deformity, in whom the total knee arthroplasty during 2004-2016 was performed. 15 patients with isolated rheumatoid arthritis of the knee, and 52 patients with primary osteoarthritis. Out of these patients, 38 were women and 9 were men. The average age of

operated patients was 62.6 years.

In 7 patients, the surgery was performed in both knee joints, with the time interval between operations of 6-12 months.

Postoperatively, all patients were examined clinically; to perform pre-operative planning, x-ray of the joint was performed in orthostation, with determination of the deformation angle, the anatomical and biomechanical axis, the degree of subchondral bone condensation in the deformed segment.

Before operation, the angle of deformity in varus was 17°; the deformity in valgus - 18°.

All interventions were performed using tubidus anesthesia with the application of a tourniquet in the proximal region of the thigh, the average duration of operation was 60 minutes.

In 6 patients, primary prostheses with increased stylization were implanted, in patients with a deformation angle over 20°, in 51 cases primary prosthesis with posterior stabilization was used, a rotata prosthesis was implanted in 8 patients. In all cases, we used the anterior approach with medial arthroscopy, the medial or lateral release was performed depending on the deformity in each individual case.

For the preoperative assessment of osteoarthritis, we used the Ahlback Radiological Classification (1968).

Results and Discussions

Clinical evaluation was performed by analyzing the general health status, using the preoperative and postoperative IKSS score at 2-4 years, which was studied in 54 patients; examination of the medial-lateral and anterior-posterior ligaments' stability by using the posterior drawer test and the one for varus-valgus. Intraoperative and postoperative radiological assessment followed the axial alignment, size and position of the prosthesis components, and radiotransparency in standard antero-posterior and lateral views.

In all cases, we used the anterior approach with medial arthroscopy. The technique of knee arthroplasty with valgus deformity using lateral approach was described many years ago.

English P.A. (1991) was the first to recommend the lateral approach, later improved by Buechel (F (1991), N.J. Fiddian C. Blakeway, A. Kumar (1998), J. Brilhault, S. Lautman, L. Favard, P. Bardin (2002), and S. Hofmann (2010). However, this approach is not a routine procedure for all surgeons, because difficulties arise due to the complexity of the lateral capsulo-ligamentar apparatus and the tibial tubercle, which requires experience with a long period of learning.

Achieving an effective ligamentar balance in total knee arthroplasty with valgus deformity is extremely complicated due to retraction of the lateral capsulo-ligamentar apparatus and laxity of the medial compartment; for these reasons, in deformities greater than 20°, it is advisable to use superstabilized revision prostheses.

The IKSS score increased from 32 to 94 points at the end of the monitoring period. The average of preoperative mobility was 60°; postoperative mobility was 103° with a statistically significant difference ($p < 0.05$). The average of the femoral axial component's deviation was 6°. The mean of the tibial axial component deviation in valgus was 1°. Twenty-eight (42%) patients have shown excellent results according to the IKSS score. None of the operated knees were unstable at the time of examination, 2 minor complications were observed.

In one patient the popliteal vein was partially injured during the intervention, when the orientation maneuvers at the tibial plateau level were being performed. The problem was solved after ligation of the knee prosthesis using the posterior approach, through popliteal fossa with the partial suture of the vein; the postoperative development did not show any specific deformities from the rest of the group.

Conclusions

1. Total knee arthroplasty is an argued and

effective solution in the treatment of osteoarthritis of the knee with valgus deformity in advanced stages.

2. Careful selection of patients, proper preoperative planning, and adherence to the surgical techniques according to the algorithm allows us to achieve good functional outcomes in the majority of cases.

3. Total knee arthroplasty allows correction of deformity, alleviation of pain, improvement of joint mobility, relatively rapid resumption of function in the postoperative period, and considerably improves the quality of life in these patients.

4. In patients with valgus deformities with an angle over 20°, the use of superstabilized revision prostheses is recommended.

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