

Application Of Radiofrequency Neuroablation In Degenerative Osteoarthritis Of The Hip And Knee Joints

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Annotation. *Ablation (denervation of sensory nerves) is a new simpler and more effective method of treatment. RF denervation of the sensory nerves of the TBS in the treatment of coxalgia, CS - in the treatment of osteoarthritis. The latter are most widely used by the method of RF ablation (RFA) of the obturator and femoral nerves in osteoarthritis of the hip joint and knee joint without surgery. We performed it in 35 patients with coxarthrosis and in 25 with gonoarthrosis. The patients underwent Doppler and X-ray MRI, ultrasound, examination. All patients underwent neuroablation by the method developed by us. assessed the results of treatment according to the U. Oberg scale, good and very good results were considered when the patients had no pain in the joints when walking and at rest, the increase in the range of motion of the joints and normal walking were also taken into account. In patients with osteoarthritis of large joints, patients with 1 month - 85.5%, 3 months - 89.3%, 6 months - 82.5%, 12 months - 78.5%. .. The duration of remission has increased for at least 9 months. Unsatisfactory results were observed in 3% of patients with grade IV osteoarthritis who required surgical treatment, i.e., endorotheses of large joints due to the presence of concomitant diseases. ...*

Key words: *radiofrequency neuroablation, degenerative osteoarthritis, hip joint, knee joint, pain syndrome, evaluation of treatment results.*

1. INTRODUCTION

Relevance Osteoarthritis of the hip and knee joints is one of the most pressing problems of modern orthopedics, which are accompanied by severe pain syndrome and limitation of joint function. With age, the number of patients with osteoarthritis of the hip (hip) and knee (ks) joints increases with significant economic costs and an increased risk of death. Recently, a modern new innovative method has been used for severe pain syndrome against the background of arthrosis in hip and cs denervation (ablation) The method of radiofrequency neuroablation (RFNA) is used to reduce pain in the hip and knee joint also when it is

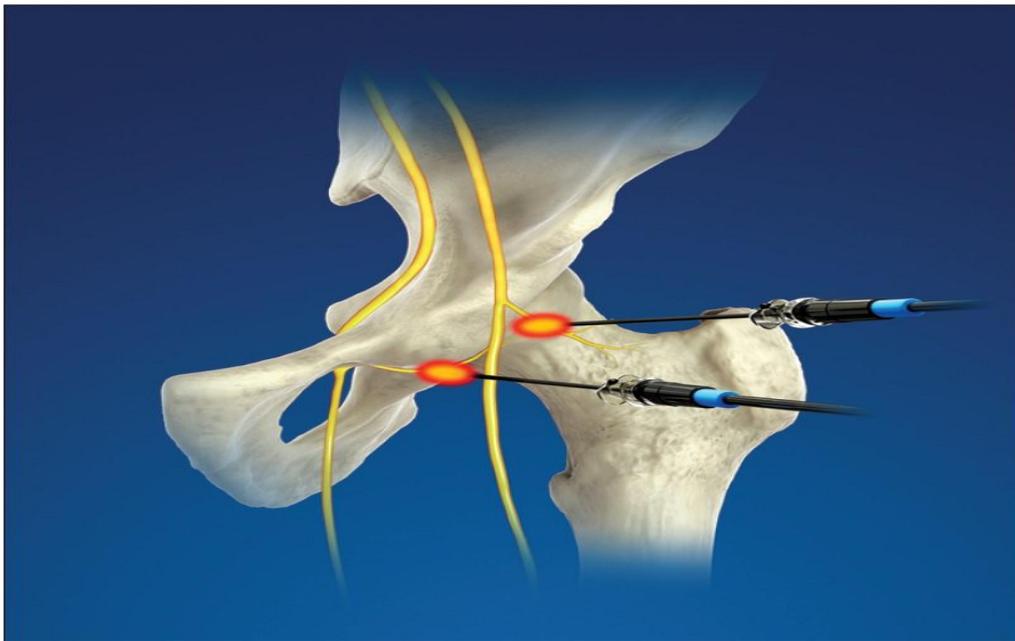
impossible to replace the joint .. sensory nerves) is a new, simpler and more effective treatment. RF denervation of the sensory nerves, tbs, with coxalgia, cs - with osteoarthritis. The most widely used method of RF ablation (RFA) of the obturator and femoral nerves in osteoarthritis of the hip joint and knee joint without surgery.

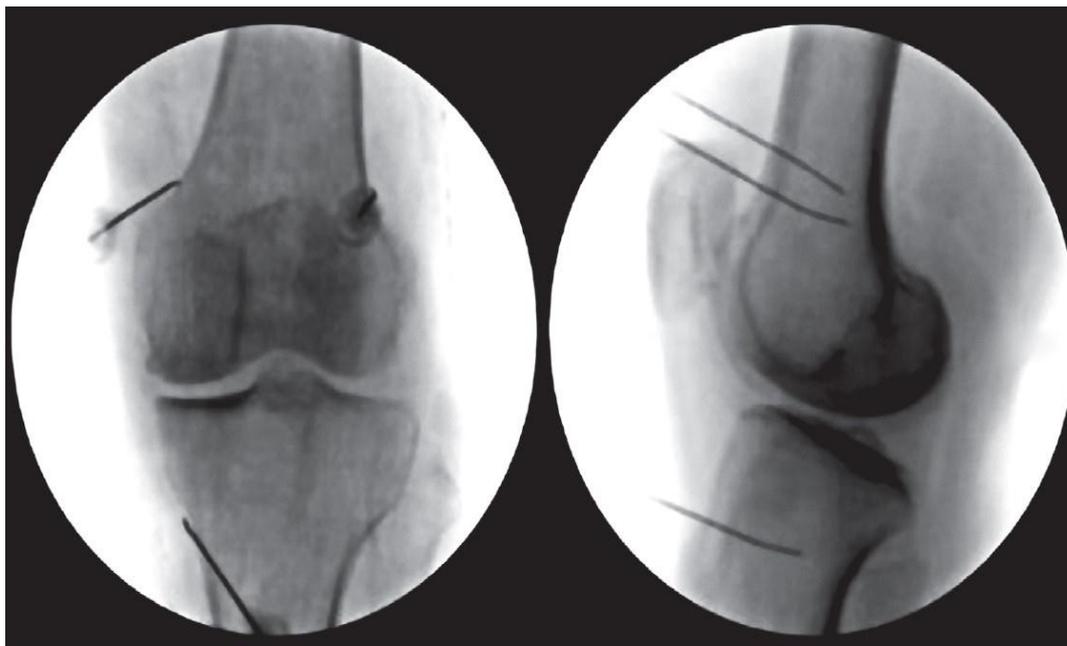
RFNA is a safe and effective treatment that provides long-term pain relief by interrupting transmission from the affected organ through nociceptive signals to the central nervous system. The electrical current generated by radio frequency waves warms up a small area of nerve tissue, while the degeneration of a specific area is noted and pain signals are reduced. This method is simple, with this technique, in addition to local anesthesia, blockade of tbs and cs is not used, and various hormones and any hyaluronic acid are not used during its implementation. Regardless of its causes in the area of hip joint and, ks after the point application of waves of electric current to the nerves, the patient feels a significant reduction in pain in the pelvic and knee area.

The indications for the use of this technique are:

1. Degenerative joint diseases;
2. Osteoarthritis of the hip joint and knee joint;
3. Total hip arthroplasty and knee joint replacement (before or after surgery);
4. If there are contraindications for hip arthroplasty and knee joint replacement

This method relieves pain, restores joint function, while there are few complications, as well as a decrease in the intake of pain medications. Since patients have systemic diseases, severe concomitant pathology and there are restrictions on the implementation of arthroplasty of the hip joint and CS in such cases, the RFA method can be performed.





2. RESEARCH MATERIAL AND METHODS.

Under our supervision from 2018-2020, 60 patients with osteoarthritis of large joints were admitted to the traumatology department in the clinic of the multidisciplinary regional clinical hospital and the private clinic of Bukhara Starorthomed and the RCH # 1. Men - 25 and women -35. Of these, at the age of 30-45 years 6 (10%) patients, from 46-55 years old 13 (22%) patients, from 56-65 years old 18 (30%) patients and from 66 - over 23 years (38%) patients. Of these, 35 patients were with coxarthrosis and 25 with gonarthrosis. The patients underwent Doppler ultrasonography and X-ray MRI, ultrasound, examination. All patients underwent neuroablation according to the technique developed by us.

Long-term results were studied in all patients (35 with coxarthrosis and 25 with gonarthrosis), according to three main symptoms: pain, mobility, walking of the patient. The average follow-up period with long-term results was 6 months. up to 1 year, the evaluation of the results of treatment was carried out according to the scale of **W. Oberg**.

These signs were divided into 3 categories: they were rated at 11 and 12 points each. Evaluation of results can be carried out in two ways, in terms of absolute or relative indicators. We have evaluated the absolute values of the sum of points scored by patients before and after treatment of large joints.

To assess the functional state of patients before and after treatment, neuroablation was carried out after the method developed by us (from 0 to 7 in increasing order, that is, from the absence of pain - 11-12 points, to pronounced and constant - 0 points).

- the degree of mobility of the hip and knee joint was assessed normally over 90 degrees, with abduction up to 30 degrees - 11-12 points, before ankylosis in a vicious position - 0 points. Assessment of the state of walking was assessed from 11-12 points, when the patient could not walk - 0 points. Summing up the scores for the parameters - pain, mobility, walking, the results of the functional state of the hip and knee joints were assessed. The result of the sum of points 11-12 was assessed by us as very good, 10 points - good; 9 points - average; 8 points - mediocre; 7 or less points is bad.

The severity of the pain syndrome shows the effectiveness of this method, that immediately the pain decreases for a long time and the patients' ability to work quickly recovers. (Table 1)

Table 1
Severity of pain syndrome in patients with OA of the hip and knee joints before and after RFA neuroablation

The nature of the pain	The severity of the pain syndrome in points						
	With coxaarthrosis patients		With gonoarthrosis sick		Total Before after treatment		Standard value of points
	Before treatment 35	After treatment 35	Before treatment 25	After treatment 25	60	60	
No pain							11
easy or rare pain, normal activity	-	25 (75%)	-	13(52%)	-	38(63%)	9
slight pain while walking, quickly disappears during rest	-	10 (35%)	-	12 (48%)	-	22(37%)	7
tolerable pain limiting activity	1 (2,8%)	-	1 (4%)	-	2 (3%)	-	5
severe pain while walking, excluding any activity	5(14,2%)	-	5 (20%)	-	10 (16%)	-	3
severe pain even at night	13(37,2%)	-	7 (28%)	-	20(34%)	-	1
pronounced and constant	16(45,8%)	-	12(48%)	-	28(47%)	-	-
Total	35 (100%)	35 (100%)	25 (100%)	25 (100%)	60 (100%)	60	
Average score	5,2	9,8	5,5	9,2			

As can be seen from the table, after treatment with coxaarthrosis, out of 35 patients, 25 patients had easy or rare pain, normal activity; in 10 patients - slight pain while walking, which quickly disappeared during rest. Severe nocturnal and severe and persistent pain was not observed.

After treatment with gonoarthrosis, out of 25 patients, 13 patients showed mild or rare pain, normal activity; in 12 patients, slight pain while walking, also quickly disappeared during rest. Severe nocturnal pain, severe and persistent, was not observed.

We also studied the degree of mobility of the hip joint in the observed patients after surgery.

Table 2
Mobility degree in patients with OA of the hip and knee joints before and after RFA neuroablation

Degree of mobility	The degree of hip mobility in points						
	With coxarthrosis		With gonoarthrosis		Total		Nor value of points
	Before treatment	After treatment	Before treatment	After treatment	before	after	
flexion: more than 90 degrees, abduction: up to 30 degrees	-	14 (40%)		10(40%)		24(40%)	11
flexion: 80-90 degrees, abduction: less than 15 degrees		11 (31%)		9 (36%)		20(34%)	9
flexion: 60 - 80 degrees the patient can reach the foot	5 (14%)	8 (23%)	6 (24%)	4 (16%)	11 (18%)	12(20%)	7
flexion: 40 - 60 degrees	10 (28%)	2 (6%)	8 (32%)	2(8%)	18 (30%)	4(6%)	5
flexion less than 40 degrees	16(45%)	-	10 (40%)		26 (44%)		3
no movement, slight deformation	4(13%)	-	1(4%)	-	5(8%)	-	
Total	35 (100%)	35 (100%)	25 (100%)	25 (100%)	60 (100%)	60	-
Average score	5,3	9,0	5,1	9,2			

The table shows that after treatment with coxaarthrosis out of 35 patients was noted: in 14 patients flexion: more than 90 degrees, abduction: up to 30 degrees; in 11 patients, flexion: 80 - 90 degrees, abduction: less than 15 degrees; in 8 patients, flexion: 60 - 80 degrees, the patient can reach the foot; in 2 patients, flexion: 40 - 60 degrees. Flexion less than 40 degrees, slight deformation and with ankylosis in the vicious position was not.

After treatment with gonoatrosis, out of 25 patients it was noted: in 10 patients, flexion more than 90 degrees, abduction up to 30 degrees; in 9 patients, flexion of 80 - 90 degrees, abduction less than 15 degrees; in 4 patients, flexion 60 - 80 degrees, the patient can reach the foot; in 2 patients, flexion of 40 - 60 degrees. Flexion less than 40 degrees, no active

movements, slight deformation. Ankylosis in a vicious position was not observed. When assessing the degree of mobility of the hip joint in patients after neuroablation RFA surgery, ankylosis was not revealed, the functions of the hip and cranial joints improved, the amplitude of joint movement increased.

The degree of restoration of the function of the affected joint was also judged by walking. Out of 60 (100%) patients with TBC 35 before the use of RFA neuroablation

5 could walk only with crutches and with one cane for less than 1 hour; difficult - without a cane 14. Patients KS - 3 patients could walk only with crutches and with one cane for less than 1 hour; difficult - 14 patients without a cane.

Table3

Assessment of the state of walking in patients with OA of the hip and knee joints before and after RFA neuroablation

Walking condition	Assessment of the state of walking in points						
	With coxaarthrosis		With gonoarthrosis		Total		Normative value of points
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	
norm		5(14%)		5(20%)		10(17%)	11
no cane but slight limp		13(37%)		9 (36%)		22(37%)	9
with a cane - can walk for a long time, for a short time - without a cane and limping	5 (14%)	15 (43%)	2 (8%)	8 (32%)	7 (12%)	23(38%)	7
using one cane for less than 1 hour; difficult - without a cane	14(40%)	2 (6%)	8 (32%)	3 (12%)	22 (37%)	5(3%)	4
with canes only	11 (32%)		12 (48%)		23 (38%)		3
only with	5(14%)	-	3 (12%)	-	8 (13%)		2

crutches							
can't walk	-	-		-			0
Total	35 (100%)	35 (100%)	25 (100%)	25 (100%)	60 (100%)	60 (100%)	-
Average score	5,4	9,8	5,1	10,2			-

The table shows that after treatment with coxarthrosis, out of 35 patients it was noted: in 5 patients walking was noted normalized; 13 patients walked without a cane, but with a slight limp; 15 patients with a cane could walk for a long time, for a short time - without a cane and limping; 2 patients using one cane less than 1 hour, difficult - without a cane. Patients walked only with crutches and could not walk without being noted.

After treatment with gonoarthrosis, out of 25 patients, 5 patients showed normal walking; in 9 patients they walked without a cane, but with slight limp; 8 patients with a cane could walk for a long time, for a short time - without a cane and lame; 3 patients with one cane for less than 1 hour, difficult - without a cane. Patients walked only with crutches and could not walk - they were not noted.

The patients observed by us before treatment were observed with varying severity of pain, mobility and walking. After treatment, these indicators of joint pain gradually decreased and the mobility of the joints, walking improved, which indicates the effectiveness of the use of RFA neuroablation by the technique we developed for coxarthrosis and gonarthrosis. We have evaluated the results of treatment with the use of RFA neuroablation in cox arthrosis and gonoarthrosis by the method developed by us in the near future according to the scale of U. Oberg, table 4

Table 4

Evaluation of the results of treatment of the use of RFA neuroablation for cox arthrosis and gonoarthrosis by the method developed by us in the near future according to the U. Oberg scale

Assessment (score)	With gonoarthrosis	With coxarthrosis	Number of patients
Very good (11-12)	12 (35%)	8 (32%)	20(30%)
Good (10)	19 (54%)	14 (56%)	33(55%)
Medium (9)	3 (8%)	2 (8%)	5 (12%)
Unsatisfactory (7 or less)	1 (3 %)	1 (4%)	2 (3%)
Total	35 (100%)	25 (100%)	60(100%)

The table shows in the next 3 months. the results in patients with gonoarthrosis were obtained very good 12 (35%) and good 19 (54%) and coxarthrosis very good 8 (32%) and good 14 (56%), These indicators indicate rehabilitation

the effectiveness of this method.

Examples of patients: Patient A. D 70 years old with a diagnosis of Coxarthrosis of the hip joint on the left to the right, grade 2. Before treatment, there was severe pain even at night, flexion less than 40 degrees, walked only with canes. After treatment, there was a slight pain during walking, quickly disappeared during rest; 80–90 degree flexion, abduction: less than 15 degrees: walked without a cane, but had slight limp. The mean score was 5.2 before treatment after treatment became 9.6

Thus, we evaluated the results of treatment according to the U. Oberg scale as good and very good results were considered when the patients had no pain in the joints when walking and at rest, we also took into account the increase in the range of motion of the joints and normal walking. In patients with osteoarthritis of large joints, we noted an improvement in results after 1 month in 85.5%, 3 months in 88.0%, 6 months in 82.5%, 12 months in 78.5%. .. The duration of remission has increased for at least 9 months. Unsatisfactory results were observed in 1 (3%) patient with osteoarthritis of the IV knee joint who required surgical treatment, i.e. endoprosthesis of the knee joint due to the presence of concomitant diseases, the method of knee joint ablation was performed.

3. CONCLUSIONS:

1. RFA may relieve pain symptoms in cases where other conservative treatments have failed
2. The use of RFNA is a modern, effective and promising method of treatment and results after 1 month in 85.5%, 3 months in 89.3%, 6 months in 82.5%, 12 months in 78.5% ... The duration of remission increased for at least 9 months.

LITERATURE

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