

Pseudarthrosis Of The Femoral Neck Treated With Total Hip Arthroplasty (About 14 Cases).

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Abstract: Pseudarthrosis of the femoral neck is a fairly common complication of fracture of the femoral neck. It is defined by the absence or cessation of consolidation of a true cervical fracture. The period of consolidation is quite subjective, and three or four months after we accept evolution without consolidation, there is pseudarthrosis. Through 14 cases collected in our service, we will discuss the clinical and radiological arguments posed an indication of the total hip prosthesis in the femoral neck and we will evaluate the success rate of the latter compared to conservative treatment. The functional results were evaluated according to the Merle d'Aubigne.

Keywords: Pseudarthrosis , Femoral neck , Prosthesis

INTRODUCTION

Pseudarthrosis of the femoral neck is a fairly common complication of femoral neck fracture, it is the natural evolution of the latter in the absence of treatment. It is defined by the absence or cessation of consolidation of a true cervical fracture. The period of consolidation is quite subjective, and three or four months after we accept evolution without consolidation, there is pseudarthrosis. Clinical diagnostic criteria are the persistence of mobility in the fracture, but mainly by the persistence of radiological fracture with densification fragmentary ends and filling the medullary canal. Through 14 cases collected in our service, we will discuss the clinical and radiological arguments posed indication of PTH in the nonunion of the femoral neck and we will evaluate the success rate of the latter compared to conservative treatment.

MATERIALS AND METHODS

Our work focuses on the study of 14 cases of pseudarthrosis of the femoral neck treated with total hip arthroplasty. We recall clinical and radiological evidence we have studied:

Age: The age of the patients varied between 48 and 81 years old, with an average of 69.2 years. 85% of them are older than 60 years.

Sex: We have in our series a female predominance, 8 women 6 men.

Circumstances of occurrence of the accident: pseudarthrosis of the neck has been always due to a fracture of the neck which was not consolidated. In our series 11 cases were falling as the cause of their condition, for 3Other cases they have been the victim of 1accident of the highway and they are aged respectively 48, 54 and 60 years.

Reached the side: In our study, there was a predominance of pseudarthrosis of the right hip (8cas 14). But this argument has no interest from a practical point of view.

The period of initial management: In our series, the time between initial fracture and consultation for care varies between 3 and 18 months.

Etiological circumstances: Twelve patients among our 14 cases, have been the subject of any treatment, and continued to walk on the limb without any precautions. Two patients underwent an initial surgical treatment, it is bone screw.

Comorbidities and tares: Ten of our patients had hypertension, two of them were carriers of hypertensive heart disease; one patient had atrial fibrillation.

Clinical Features: The majority of patients had a partial or complete functional impairment. Lameness is present in 13 of our patients The examination of our patients allowed us to find a number of features specific to the pseudarthrosis: 13 of our patients have a distinct shortening of the limb relative to the other. It varies between 2 and 4cm. The atrophy was observed in all cases in our series. The mobility of the affected hip is limited in almost all of our patients, and all the movements are more or less affected.

Radiological characteristics: It was found 10 cases of transcervical locations and 4 cases base-cervical. In all cases, we observed on radiographs of the pelvis side, a net rise of large and small trochanter at the side reached. We found 9 patients with adduction, a patient with abduction and 5 of our cases we made any deviation from the axis of the femur. For all of our patients the femoral head was placed. Standard radiography can judge vascular conditions, and none of our patients did not receive a scan or MRI. ten of our cases had osteoporosis was clear on plain radiographs; The remaining cases had normal bone mineralization. Eleven cases of our series were operated under spinal anesthesia, the three remaining patients were operated under general anesthesia. The outer posterior pathway Moore was the first exclusive channel for patients in our series. 13 patients in our series were treated with cemented THA; the exception was a young 54 year old patient who received a cementless prosthesis

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Fig1: Pseudarthrosis of femoral neck fracture neglected neck in an elderly patient aged 80



Fig2: Pseudarthrosis of the femoral neck on neck fracture treated by screwing in a 54 year old patient who underwent cementless THA.

RESULTS

Of the 14 operated cases, 6 were lost to view. The average follow-up was 18 months.

1 Functional evaluation :

The functional results were evaluated according to the Merle d' Aubigne, which is based on the assessment of pain, mobility and walking (Table 1).

Effect on pain

Five of our patients have never reported pain or to walk or to the recovery of the support, or in the revision:

No pain (rated 6): 5 cases.

Pain - listed 5: 2 cases.

Pain - grade 4: 0 case.

Pain - listed 3: 1 case.

Pain - listed on 2 0 case.

Pain - listed 1: 0 case.

Results on mobility:

Recovery amplitudes of the hip joint was very satisfactory in 6 among our 14malades, with an amplitude of bending ranged from 90 to 120 ° Two patients had reduced mobility:

Mobility - 6: 6 cases.

Mobility - 5: 1 case.

Mobility - 4: 0 case.

Mobility - 3: 1 case.

Mobility - 2: 0 case.

Mobility - 1: 0 case.

Results on the march:

The OLB was stable in the majority of cases with perfect stability and normal operation. Recovery of muscle strength was done with remarkable rehabilitation sessions and gait training.

Walk - 6: 5 cases.

Walk - 5: 2 cases.

Walk - 4: 0 case .

Walk - in 3: 1 case.

-On 2: 0 case.

-On 1: 0 case.

Table 1: Listing of Merle d'Aubigné

listing	pain	Mobility	walking
0	Sharp pain and continues.	Ankylosis in faulty attitude.	Impossible
1	Sharp pain preventing sleep.	Clinical ankylosis without nasty attitude	With 2 crutches.
2	Sharp pain when walking preventing activity.	Flexion 40°, 0° Abduction Attitude vicious light	With 2 crutches.
3	Sharp pain after ¼ hour walk.	Limited 40° to 60° flexion	Impossible without cane.
4	Pain after 4 hours walk away with rest	60-80° flexion, can set his shoe	Extended with cane. limited without a cane
5	Pain start	Flexion 80-90°, 25° abduction	Without a cane, slight limp.
6	complete indolence	Flexion 90°, 40° abduction	normal

Thus, the average of the results in pain, mobility, and walking provides a listing 16.5; so that the results of our series are good.

2 Radiological evaluation:

Radiological monitoring was simple, limited to a snapshot of the face basin and possibly taking the whole profile of the prosthesis. Careful study of successive radiographs and their confrontation with the postoperative cliché that will serve as a reference throughout the evolution of the prosthesis is the main time monitoring of the entire prosthesis that was implanted to detect beginners complications and repatriation offer. Haut du formulaire And the bone-cement junction was analyzed for each zone, the piping were sought in each area of the bone-cement interface. The environment of the prosthesis was studied according to the scheme established by ONP; the position of acetabular parts was monitored by the method of CHEUROT.

3 Total results:

We emphasize with satisfaction the absence of infectious complications early or late, except for one patient who presented early postoperative infection and has evolved under antibiotic treatment. The long-term evolution has been dominated by the occurred in the same patient from septic loosening of THA after 1 year, picked up by the removal of the prosthesis Our series to insufficient follow, goals imposed on surgical treatment of pseudarthrosis of the femoral neck were obtained, namely: Retrieve a mobile painless hip, and stable.

- Excellent: 5 cases.

- Very good: 0 case.

- Good: 2 cases.

- Fair: 0 case.

- Poor: 0 case.

- Bad: 1 case.

We advised our patients have a relative economy of the prosthesis emphasizing:

- The development of the lumbar musculature that allows flexibility, and stability of the lumbar spine.
- Improve the gluteus medius guarantee better stability of the hip prosthesis rehabilitation.
- Infection Prevention: the dental outbreaks are treated with antibiotics; intramuscular injections on the side of the prosthesis should be avoided.
- Teach the patient to consult when the prosthesis becomes painful, and never considered normal.
- Finally, it must avoid the vicious attitudes (adduction, internal rotation, excessive bending ...).

Table 2: Overall evaluation of the function of the hip.

pain	mobility	walking	total	appreciation
6	6	6	18	EXCELLENT
6	5	6	17	VERY GOOD
6	6	5		
5	6	6		
6	5	5	16	GOOD
6	4	6		
5	5	5	15	
6	4	5		FAIR
6	6	5		
5	4	5	14	
5	5	4		MEDIocre
4	5	4		
4	4	4	12	
5	3	4	11	BAD
			9	
results if no improvement or worsening			9	

DISCUSSION

We note in our series, the frequency increased pseudarthrosis of femoral neck fractures untreated or treated by traditional methods (12 cases). In our country the incidence of femoral neck pseudarthrosis remains high and misjudged because of the use of "JBIRA" which is a common practice in the treatment of fractures by "quacks". There's a few articles in the literature on the results of THA made either after failure of

conservative treatment, either on a neglected fracture (1,2). The frequency of this complication varies between 4% and 53% according to the authors. We reported the results of THA performed as a rescue procedure in these forms, on a series of 14 patients; the average age at the time of THA was 69.2 years. In the series of K. ZEHI 40 cases, the average age is 44.5 years (3). In our study there was a slight female: 8 females and 6 males, which is consistent with the series of PIDHORS and Lahbabi, who had 32 females and 22 males (4). The study reached the side has no interest from a practical point of view; we noted the frequency of right infringement, and in the case of series K. ZEHI (3). Regarding the seat of the pseudarthrosis was emphasized frequency the transcervical form 57%, these results are comparable to those of other authors:

- PIDHORZ: 53 case, 47% transcervical, basicervical 13% and 40 % in the capital. (4)
- Hussar: 8 cas, 62 .5 % transcervical 25% basicervical , and 12.5 % in the capital. (5)
- Decloux: 42cas , 57% transcervical, basicervical 32%, and 7 % in the capital. (6)
- ZAHl: 41cas, 40% transcervical, basicervical 50% and 10% in the capital. (3)
- Our series: 14 cases, transcervical 57%, 36% basicervical, and 7 % in the capital.

All homes pseudarthrosis was accompanied by a rise of the greater trochanter and femoral neck resorption. The femoral head was up but could not assess its viability, because it was not conducted scan or MRI; 14 cases in our study we found 2 cases of necrosis certain view radiography basin face. ZAHl.K is 9 cas necrosis of the head, but on a series of 41cas (7). In cases of pseudarthrosis initially treated by screwing, technical imperfection was evident; it was either a default reduction or inadequate restraint. The total hip arthroplasty is used in our study after failure of initial treatment (screw) in 2 cases and a fracture in 12 cases neglected. In the series of M.RAHMI PTH is used after failure of conservative treatment in 9 cases, and a fracture in 12 cases neglected (8). The time between initial treatment and the occurrence of non consolidation in our series ranged between 6 months and 18 months. In this series of M.RAHMI duration varied between 8 months and 5 years (8). The anesthesia used was spinal anesthesia in 11 patients; the rest (3patient) was operated under general anesthesia. The surgical gesture was to a total cemented hip arthroplasty, the surgical approach was exclusively posterolateral MOORE. The femoral head was in the osteoporotic and very friable almost all the greater trochanter was hiding ascended the acetabulum. The atrophy was evident. Mean follow-up was 18 months with a range of 12-48 months. Most patients of patients followed in consultation had uneventful recovered; hip became painless and stable with satisfactory mobility. Complications were dominated by septic loosening occurred THA after 1 year, picked up by the removal of the prosthesis. Marry is 9 cases septic and aseptic loosening in his series of 99 cases made but with a decline in 10 years (9).

CONCLUSION

At the end of this work, which was to study a series of 14 cases of pseudarthrosis of the femoral neck treated with THA, in the University Hospital Trauma Orthopaedics Ibn Sina hospital flap, we wish to highlight certain points which we

consider important: pseudarthrosis of the femoral neck is a non-consolidated after a period of 3 to 4 months fracture. It complicates 4-53 % of fractures of the femoral neck, the authors the key consideration is the standard radiograph of the pelvis which show the persistence of the fracture or displacement, disassembly, or material damage bone The treatment for this complication remains full of shades, it depends on a number of factors:

- The physiological age of the subject. Our professional and general activity. The state of the anatomical proximal femur.
- We recall the therapeutic indications for total hip arthroplasty:
- An age of 60 years for some more about 70years. In young subjects, no tonic, with a femoral head necrosis or severe cervical resorption.

Moreover, in a young toned subject, with a living femoral head, and limited cervical resorption, osteotomy is required. Finally, we must not forget that the true therapeutic, is the prevention of this dreaded complication of fractures of the femoral neck, they should not suffer any delay or therapeutic workmanship. Finally, the result would not be complete without the support of a well-conducted and sufficiently prolonged rehabilitation

REFERENCES

- [1] NILSON.LT, STROMQVISIT.B, THORNGREEN.K : Secondary arthroplasty for complications of femoral neck fractures university hospital LUND, Sweden vol 71-B, n° 5, November 1989, PP 777-781
- [2] PAI.VS, ARDEN.DN, WILSON.N : Fractured neck of femur in the mobile independent elderly patient: should we treat with total hip replacement? J Othop Surg (Hong Kong).2003 Dec; 11(2): 123-8
- [3] K.ZEHI, A.BOUGUIRA, F.SAADAOUI, M.H.MEHERZI, S.KARRAY, M.ZOUARI,T.LITAIM, M.DOUIK : Ostéotomie de valgination dans les pseudarthroses du col du fémur a propos de 41 cas. Revue de chirurgie orthopédique, 2001,87, 562-568
- [4] PIDHORZ.L, LAHBABI.S, BEBURGA: Les pseudarthroses du col du fémur: traitement par ostéotomie inter trochantérienne. Rev.chir, Orthop, 1974, 60,205-221
- [5] HASSAR G.: Ostéotomie de valgination pour pseudarthrose du col fémoral. Thèses de doctorat en médecine n°17/2001
- [6] DECOULX P.RAMZEMON J.P.: Traitement des pseudarthroses du col du fémur chez le sujet jeune par l'opération de STEWART. Acta Orthop belg, 1967, 33, 777-787
- [7] MUKESH KALRA, SANJEEV ANAND: Valgus intertrochanteric osteotomy for neglected femoral neck fractures in young adults. International orthopaedics, 2001, vol 25, n° 6 pages: 363-366.

- [8] M.RAHMI, B.DOUMANE, D.MARSSI, M.TRAFEH :
L'arthroplastie totale de la hanche dans les séquelles
des fractures cervicales vraies. Service de traumatolo-
orthopedie CHU Ibn Rochd Casablanca. Rev.
Maroc.chir.orthop.traumato, 2001, 12,5-14
- [9] MARBRY.TM, PRPAB.E, HAIDUCKEWYCH.GJ,
HARMSSEN.W.S, BARRY.D.J : Long term results of total
hip arthroplasty for femoral neck fracture non-union. J.
Bone. Joint. Surg. Am. 2004 oct, 86-A (10): 2263-7.