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Treatment of Femoral Neck Fractures: Partial Relief through Anterior Direct Approach

Jin Luo[1], Xi Chen[2]*

[1]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China
[2]Institute of Forming Technology & Equipment, Shanghai, China; Institute of Medical Robotics, Shanghai Jiao Tong University, Shanghai, China

Corresponding author:
Xi Chen, Institute of Forming Technology & Equipment, Shanghai, China; Institute of Medical Robotics, Shanghai Jiao Tong University, Shanghai, China. E-mail: xichen@sjtu.edu.cn

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Abstract

Femoral neck fractures are common injuries among senior population and rap present a significant cause of morbidity and mortality. Hemi Arthroplasty is most frequent choice for senior cases with different co-morbidities and reduced functional demands. The direct anterior approach is believed to accelerate functional recovery by limiting iatrogenic muscle damage. 84 cases were treated from January 2019 to September 2020 for femoral neck fracture and operated by partial hipsterism relief through direct anterior approach. We compared two groups, the first bone was operated by expert hipsterism surgeons and the alternate new operated by youthful surgeons. Were estimated for every case the operating time, the variation between pre-operative and post-operative hemoglobin value, the during of hospitalization, the blood transfusion rate, the early walking of cases and the eventual presence of preoperative complications. In our two groups youthful and elderly, there's a difference in operating time, in front of insignificant differences in other results. The immediate issues are cons, all cases started physiotherapy the day after surgery with complete weight bearing. We demonstrated that the approach is unremarkable indeed in youthful surgeons. For this reasons AMIS can be preferred to other approaches also in neck fractures, for hemi Arthroplasty and not only by expert's hipsterism surgeons.

Keywords: Neck fractures; Hemiarthroplasty; Orthopedics

Introduction

Femoral neck fractures are common injuries among the senior population [1] and represent a significant cause of morbidity and mortality [2,3]. Displaced femoral neck fractures (Garden type III or IV) generally are treated with hipsterism relief surgery [4]. Hemiarthroplasty is the most frequent choice for senior cases with different comorbidities and reduced functional demands. The benefits are early ambulation, short operation time and better stability [5,6]. In the scientific literature, there's a debate about the stylish surgical approach. A lot of randomized trials and cohort studies compare hemiarthroplasty performed by direct anterior approach versus other surgical accesses (anterior-side, side, posterior-side, posterior) [1-7]. Anatomized issues are postoperative functional mobility, complication rate, perioperative fracture, infection rate, re-operative rate, blood loss, recovery time [1,2]. The direct anterior approach is allowed to accelerate functional recovery time for lower iatrogenic muscle damage. In our Structure, we performed only AMIS (Anterior Minimaly Invasive Surgery), for total hipsterism arthroplasty and hemiarthroplasty. We decided to assay operatory complications, blood loss, and functional postoperative issues of our cases submitted to hemiarthroplasty with a direct anterior approach, we divided into two groups. The first groups of cases were treated by hip elderly surgeons with high experience positions; the alternate cases were treated by youthful hipsterism and trauma surgeons.

Surgical Technique

The oblique skin gash is pronounced roughly from 2 cm to 4 cm distally and indirectly to the Anterior Superior Iliac chine (ASIS) and is directed along the Tensor Fascia Lata (TFL) belly for 7 cm- 9 cm. A reported complication of this approach is the propinquity to the Side Femoral Cutaneous whim-whams (LCFN).

Blunt analysis through the subcutaneous fat is recommended to further minimize the threat of whim-whams injury, which can affect in paresthesia (8). The interval between the TFL and Sartorius is entered by gash of the fascia over the medium TFL muscle belly, retaining an acceptable sleeve of towel for check and immolation protection to the Side Femoral Cutaneous whim-whams (LCFN). Care should be taken to ensure the applicable interval, as analysis through the side TFL and not in the intramuscular gate, may affect in damage to the motor branch of the superior gluteal nerve. However, blood vessels should be seen entering the fascia, If the exposure is too posterior.

The fascia becomes thick as it overlies the Gluteus Medius, which should prompt recognition of the indecorous interval again, if the aeroplane is developed too medially, analysis into the femoral triangle will do, risking injury to the femoral neurovascular pack. Blunt analysis separates the TFL muscle belly from the fascia and facilitates entry into the interval for proper exposure of the hipsterism capsule. A tone-retraining retractor is deposited between the Vastus lateralis and the Rectus Femoralis. By blunt analysis, the thrusting branch of the Side Femoral Circumflex whim-whams (LCFA) is insulated and closed. The retractor is now deposited deeper to expose the capsule. The portion of Ileopsoas disciple to the capsule is detached and also the capsule is incised with a triangular shape and so is possible to see the fracture. The strip of capsule is saved. The leg is also extra-rotated so the osteothomy of the femoral neck is performed.

The femoral head is removed by corkscrew. Chanley retractor is deposited to expose the acetabulum. The medium and cranial portion of the great trochanter is exposed by a ligamentous and capsular release until an extra-rotation of 150°- 180° and also the leg is extended. During this movement, the femur is elevated and the great trochanter is stayed in the acetabulum, avoiding the acetabular edge lesion. The femoral conduit is prepared until the achievement of the correct fit. The side proximal portion of the intramedullary conduit is enlarged using Luer tongs. X-Rays of the pelvis are useful to control the correct positioning of the stem. The definitive stem and the biarticular head are implanted and external movements are performed to test the stability of the implant. Rainspouts are deposited and the soft towel is stitched in order. Attention should be paid in order to avoid nervous injuries.

Methods and Materials

This is a relative study carried out at the Orthopedic and Traumatology Unit, Pederzoli Hospital, Pescchiera del Garda, Italy. Between January 2019 and September 2020, an aggregate of 84 cases (25 men and 59 women), were treated by hemiarthro plasty for femoral neck fracturea (Garden III or IV) All cases were treated through a direct anterior approach. Everyone was operated with AMIS system (Medacta International- Switzerland). The operations were performed both by elderly surgeons, with further than 10 times' experience with this operation, and by youthful surgeons, with not further than 2 times' experience. Cases were divided into two groups according the experience of surgeon. The First group (41 cases) was treated by expert surgeons; and the alternate bone (43 cases) was operated by youthful surgeons. All cases were operated under sub arachnoid anesthesia. To reduce blood loss were subministrated 3 g of tranexamic acid (2 systemic and 1 original) and no bone redons was deposited. Pain killer protocol included paracetamol (3 g/ day) and ibuprofen (600 mg/ day) for three days post-operative. Physiotherapy was goggled in the firstpost-operative day and after recovery continued in a devoted structure for about 2 weeks. All cases progressed between 79 and 100 times old. These cases were divided into two groups. The two groups were anatomized to estimate differences in terms of mean surgery time, blood loss, days of hospitalization, beforehand walking of cases and the prevalence of perioperative complications. Statistical analyses were performed using t- pupil test.

Results

We compared two groups that are homogenous for age (p<0,38). All cases were submitted to spinal anesthesia. The difference is apparent in the surgical timing. elderly group has a mean of 48 twinkles (range 20 twinkles- 90 twinkles), while the youthful group presents a mean of 60 twinkles (range 40 twinkles-90), with a significant difference. still, there are not significant differences of transfusion between the two groups, the rate of transfusion is similar, 21. The thepre-operatory haemoglobin is analogous between elderly (range 8,70- 15,80 with mean 12,55 g/ dL), and youthful (range 9,00- 16, 00 with mean 12,40 g/ dL), but indeed thepost-operatory results are analogous. elderly group has a range of 7,50- 13,20 with a mean of 10,25 g/ dL, the youthful range is 6,60- 14 with a mean of 10,60 g/ dL and pVAMSI0, 078). Another aspect that was estimated is the hospitalization, that results to be inferior of a day in youthful group, p 0,02. The immediate issues are positive, all cases started physiotherapy the day after surgery with a complete weight.

Discussion

Displaced femoral neck fractures are an important healthcare burden characterized by increased rates of mobility and mortality with a loss of independence in the senior population. The muscle sparing AMIS approach to the hipsterism joint for hipsterism Arthroplasty is shown to have good perioperative issues in term

of minor bloody loss, reduced recovery time, efficacity of rapid-fire functional performance, not only in optional procedures, but indeed for hipsterism fracture treatments. For this reason in our Unit, we perform only AMIS, indeed for hemiarthro plasty in neck femur fractures, and we suppose that this approach conduced to good results, indeed for youthful surgeons without long surgery experience [7]. In the two groups, youthful and elderly, there's a difference in operation timing, in front of insignificant differences in other results. This confirms our decision to use ever the AMIS fashion. The transfusion was performed only in 21 of the cases, with a difference in blood loss that isn't significant between the two groups. Hipsterism fracture produces girding muscle and towel damage. Our results confirm that the Anterior Approach reduces other damages and the quantum of blood loss during the operation [9-13]. also, AMIS is characterized for literature by many complications like operative fractures or disruption. The repetitiveness of fashion is demonstrated by the absence of surgery complications indeed in the youthful group. Another important aspect is the timing of postoperative functional mobility that's observed to be shorter in the Anterior Approach. All cases started to walk on the first day post-operative. This is due to muscle saving [12] and the absence of side femoral cutaneous whim-whams paralysis. This result is verified by the shorter recovery time, without significant differences between the two groups of cases [13].

Conclusion

AMIS is verified to be a surgical approach characterized by many complications, reduced blood loss, muscle sparing, and small gash that allow optimal issues and an immediate launch of walking with complete cargo indeed in hemiarthro plasty in neck fractures of senior people. Also, we demonstrated that the approach is simply unremarkable indeed for youthful surgeons. For this reason, AMIS can be preferred to other approaches not only for arthritis, but indeed in neck fractures, for hemiarthr oplasty, and not only by expert hipsterism orthopedic surgeons.

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