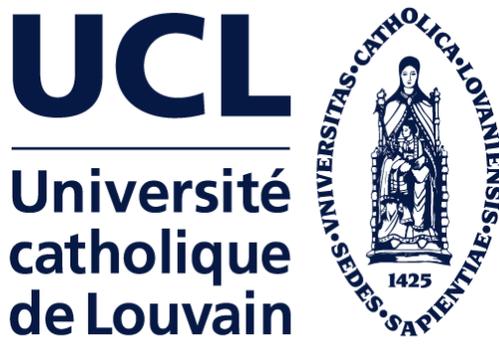


We can, but should we?

Elective major orthopedic surgery in a dement elderly patient

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CASE REPORT

An 89 years old lady, unknown by the anesthesia department, was hospitalized for elective total hip replacement (THR). She was known for depression, unstable angina, severe mixed dementia and severe lumbar and knee osteoarthritis. Two years ago, geriatric department expressed reserves about a knee replacement surgery project, especially because of the severe depressive state of the patient, major risk of malnutrition, fall and cognitive impairment. A cardiologist evaluation was infeasible as patient family “did not wish her to be operated”. Nine months later, she was hospitalized for suicide attempt and had outbursts of paranoid delirium. She had severe risk of functional decline and only walked 20 meters twice a day with a medical walker. During hospitalization, she had a fractured neck of femur requiring gamma nail surgery (Illustration 1). Two years later, she complained of moderate hip pain. Radiography showed pseudoarthrosis of the femoral neck with gamma nail passing through femoral head with secondary coxarthrosis (Illustration 2), indicating THR according to the orthopedist. The day before surgery, communication with the patient was extremely difficult due to dementia. There was no information about family wish regarding this surgery and patient had not seen geriatrician neither cardiologist since suicide attempt. Despite anesthesia team doubts regarding meanings of this surgery, she underwent right THR under general anesthesia and didn't present major complications except for worsened dementia. Two months later, back in her nursing home, she was still confused but did not seem to be in pain. Nonetheless, she had not walked since THR surgery.

DISCUSSION

Medical benefit-risk balance

Arthritis isn't a life-threatening condition, but can lead to bed confinement [1], which increases mortality risk. Pain remains the principal indication for THR, and can be relieved one week after

surgery [2]. Even if THR morbidity increases with age, the majority of medical complications are transient, and do not result in significant long-term effects [1]. When appropriate medical precautions and preparations are considered, THR is a safe and effective procedure for elderly patients [1]. On the other hand, studies shows that elderly are at relatively higher risk of mortality and morbidity after elective surgery [3] (periprosthetic fracture, infection [4], higher dislocation rates, especially in case of intellectual impairments [2,4], ...). Comorbidities are important predictors of poor prognosis following THR [2,5]: cardiovascular diseases, spine or knee osteoarthritis, clinical depression, and common geriatric problems can impair functional results [1,5]. Furthermore, severe dementia and severe functional disability are considered as absolute contraindications by most orthopedists [1], insofar as pain may be more appropriately managed by a resection arthroplasty, avoiding or minimizing many of the risks of joint replacement [1]. Surgeons should carefully select their patients for THR surgery [2] and must ascertain that none of the comorbidities are more functionally limiting than the hip [1]. Very elderly patients should be screened for cardiac diseases as cardiologic preoperative interventions can reduce the risks of THR [1]. Nonetheless, despite these orthopedic recommendations, studies have shown that there is still a high inter-surgeon variability for objective signs leading to THR indication and approximately a quarter of THR surgeries could be considered inappropriate [6].

Putting in perspective and ethical issues

Frailty is the state of vulnerability to poor resolution of homeostasis after a stressor event and is a consequence of cumulative decline in many physiological systems during a lifetime [3]. Frailty matters more than chronological age in elderly patients. As a frail patient is not able to withstand surgical stress without loss of function [7], ethical principles of proportionality, purpose, utility/futility, non-maleficence, and double effect are solicited when considering surgery. Furthermore, severe dementia brings up the topic of reasoned care versus reasonable care [8]. The principle of autonomy is sought as well, especially in this case of dementia and death wish associated with family will to avoid surgery a

few years before. Caregivers should be able to substitute for the patient in order to further apprehend her own best interest [9]. But how could they assess what she would have hoped for, when they only have met her at an advanced stage of her disease? How would they not be affected by the reflection of what will happen irrevocably? [9] On the other hand, how can they avoid leaning too far in the opposite direction: futile medical care? Dignity principle should be the main value to consider [8] in these kinds of situations. But dignity has different meanings for each of us. We have to evaluate the meaning of cares in balance with patient understanding of dignity. Are patient respect and dignity sometimes rather honored through therapeutic abstention? The central axis of discussion should be the patient with her biology, her specific clinical context, her needs, desires, life plan, hopes and distress, strengths and vulnerability that define her [10].

What is the social context around these geriatrics dilemmas?

As written in the Belgian code of medical ethics, physicians must respect imprescriptible human rights but have to be aware of their social duties toward community (Art. 8 and 99)[11]. The care relationship isn't restricted anymore to the link doctor-patient, but includes a social, legal and economic context [12]. Talking about cost-effectiveness of procedures is now a standard and the benefit-risk balance is now converted into a notion of profitability. The THR mean cost for elderly patient is 6.310 euros [13], and the one year expenditure following hip fracture is estimated around 12.300 euros [7]. However, THR in the very elderly may also be a cost-effective intervention that prevents the need for high levels of assistance and supervision [1]. Cost-effectiveness must not be the only factor influencing the decision making process, nonetheless, according to one study, 37 % of Belgians say they are ready to ration elderly health cares in order to save social insurance [12]!

Conflicts management in the operating theatre

This case raised some disagreements between surgeons and anesthesiologists. A medical task conflict is

defined as an argument, a lack of consensus, or a disagreement between individuals regarding a decision about the management of a patient [14]. They are common as they happen 1 to 4 times per elective surgery in Canada [14]. Conflicts are responsible for team stress, exhaustion, and poor performances. It also increases the risk of mistakes [14]. There are four types of answers to conflict: avoidance, adjustment, competition, and cooperation. Healthcare providers usually answer with avoidance first, then competitive and aggressive behavior [14]. Nevertheless, it is important to remember that during conflicts in the OR, the patient best interest must be the main goal, ignoring personal emotions and interests [14]. According to Savoldelli and the MAPAR, anesthesiologists can, and must if necessary, tolerate and adapt to surgeons inappropriate communication manners, because, even toward this unprofessional behavior, their goal is to promote patient best interest [14]. So, we must not tolerate surgeon behaviors that threaten patient safety, but we must pay attention to our communication manners in order to peacefully promote cooperation about patient best interest.

What about multidisciplinary work and anesthesiologist role in the decision-making process?

The multidisciplinary approach is promoted by the Belgian code of medical ethics [11]. Multidisciplinary perioperative management of elderly orthopedic patients has proven its effectiveness [3,7] and can be coordinated by senior geriatricians, with input from senior anesthesiologists and surgeons [3]. In fact, resorting to geriatricians is now a legal duty in Belgium for every patient hospitalized at 75 or later with at least one geriatric issue (including frailty) [15], and these patients must be given a multidisciplinary care plan about diagnosis, treatment, follow-up, and functional rehabilitation [15]. Could anesthesiologists play a role in this multidisciplinary care plan, as their expertise could help with preoperative planning, designed to improve patient overall condition and enhance procedure outcome? Belgian law clarifies geriatrician role in the elderly management. Surgeon role is clarified in the Belgian code of medical ethics (Art. 49) [11]. For anesthesiologist, the code only says that he will receive all useful information from the surgeon and take his own responsibilities (Art. 51) [11] ...

Therefore, despite frequent disagreements about surgery relevance for a particular patient [14], there are no rule or law and very few texts about anesthesiologists role in the surgical decision-making process. Are anesthesiologists technicians that have to obey surgeon point of view? Shouldn't we plan multidisciplinary meetings to collectively debate about cases in which medical or ethical issues are being raised? What is the weight of our point of view as physicians, clinicians, contributors and human beings in our patients management?

CONCLUSION

Despite the high efficiency of THR for elderly, questions remain concerning its indication in frail and dement patients who shake many of the main ethical principles. Physicians duty is to focus on the patient best interest, according to expressed or guessed will and to general condition, without forgetting their responsibilities towards community. In case of disagreement between physicians, priority should be given to patient safety and to cooperative behavior. Multidisciplinary work is the obvious approach, especially in front of frail elderly patients. Anesthesiologists should try to be a part of this multidisciplinary management as soon as possible, or at least as soon as the surgeon established a surgical indication. As seen with this case report, management of orthopedic elderly patients could be improved and every physicians (including anesthesiologists) should feel involved in the overall medical plan based on patient pathologies, but also on their psychosocial context. Furthermore, anesthesiologists role in the perioperative management should be clarified as it has been done for surgeons and geriatricians.

ACKNOWLEDGEMENTS

The authors are indebted to Véronique LATTEUR, MD, and Vanessa BAIO for their help and clarifications about this case and the discussion section; and to Blandine MICHEL for her help with English adjustments.

REFERENCES

1. DEIRMENGIAN C., AUSTIN M., DEIRMENGIAN G., Hip Replacement in the Very Elderly: Selecting a suitable candidate. *Aging Health*, **7**(6):803-8011, 2011.
2. CRAWFORD R.-W., MURRAY D.-W., Total hip replacement: indications for surgery and risk factors for failure. *Annals of the Rheumatic Diseases*, **56**:455-457, 1997.
3. GROSU I., L'anesthésie chez la personne âgée. Paper presented at the 8^o Journée d'Orthopédie de l'UCL, Woluwe-Saint-Lambert, Belgium, may 9th 2014.
4. OGINO D., KAWAJI H., KONTTINEN L., et al., Total hip replacement in patients eighty years of age and older. *J Bone Joint Surg Am.*, **90**(9):1884-1890, 2008.
5. BISCHOFF-FERRARI H.-A., LINGARD E.-A., LOSINA E., et al., Psychological and Geriatric. Correlates of Functional Status After Total Hip Replacement. *Arthritis Rheum*, **51**(5):829-835, 2004
6. COBOS R., LATORRE A., AIZPURU F., et al., Variability of indication criteria in knee and hip replacement: an observational study. *BMC Musculoskeletal Disorders*, **11**:249, 2010.
Online: <www.biomedcentral.com/1471-2474/11/249>
7. CORNETTE P., Le principe de co-management dans le traitement des fractures gériatriques: travaillons ensemble! Paper presented at the 8^o Journée d'Orthopédie de l'UCL, Woluwe-Saint-Lambert, Belgium, may 9th 2014.

8. LEGLISE M.-S., Soins raisonnés...soins raisonnables. Paper presented at the 4^o rencontre des gérontologues de l'Aude, France, april 20th 2007. Online <sofomec11.free.fr/Diapos/Sujet_age/SOINS%20RAISONNES.pdf>
9. HIRSH E., Alzheimer: Engagements éthique et soin. Paper presented at the Assises régionales Alzheimer d'Île de France, France, october 5th and 6th 2009. Online <www.ars.iledefrance.sante.fr/Assises-regionales-Alzheimer-d.95151.0.html>
10. LEGLISE-GENDARME M.-S., De la dignité: fin de vie et maladie d'Alzheimer ou syndromes apparentés: Questionnements éthiques à partir de deux cas cliniques en gérontologie. D.I.U d'éthique et pratiques médicales. Marseille faculty of médecine, France, 53p, 2005. Online <www.2em.org/opac/index.php?lvl=notice_display&id=3301>
11. Conseil National de l'Ordre des Médecins, Code de déontologie médicale. 71p., 2014. Online <<https://ordomedic.be/fr/code/contenu/>>
12. ROMBOUITS J.-J. STURBOIS A.-S., Aspects éthiques du traitement en Orthopédie Gériatrique: Jusqu'ou faut-il aller? Paper presented at the 8^o Journée d'Orthopédie de l'UCL, Woluwe-Saint-Lambert, Belgium, may 9th 2014.
13. VOGL M., WILCKESMANN R., LAUSMANN C., et al., The impact of preoperative patient characteristics on the cost-effectiveness of total hip replacement: a cohort study. *BMC Health Services Research*, **14**:342, 2014. Online: <www.biomedcentral.com/1472-6963/14/342>
14. SAVOLDELLI G.-L., Résolution de conflits au bloc opératoire. *Prat Anesth Reanim.* **13**:65-69, 2009.
15. DEMOTTE R., Arrêté royal fixant, d'une part, les normes auxquelles le programme de soins pour le patient gériatrique doit répondre pour être agréé et, d'autre part, des normes complémentaires spéciales pour l'agrément d'hôpitaux et de services hospitaliers. *Moniteur Belge du 07/03/2017*, p.11197, 2007. Online

ILLUSTRATION



Illustration 1: Patient right hip radiography just after gamma nail surgery (2013)

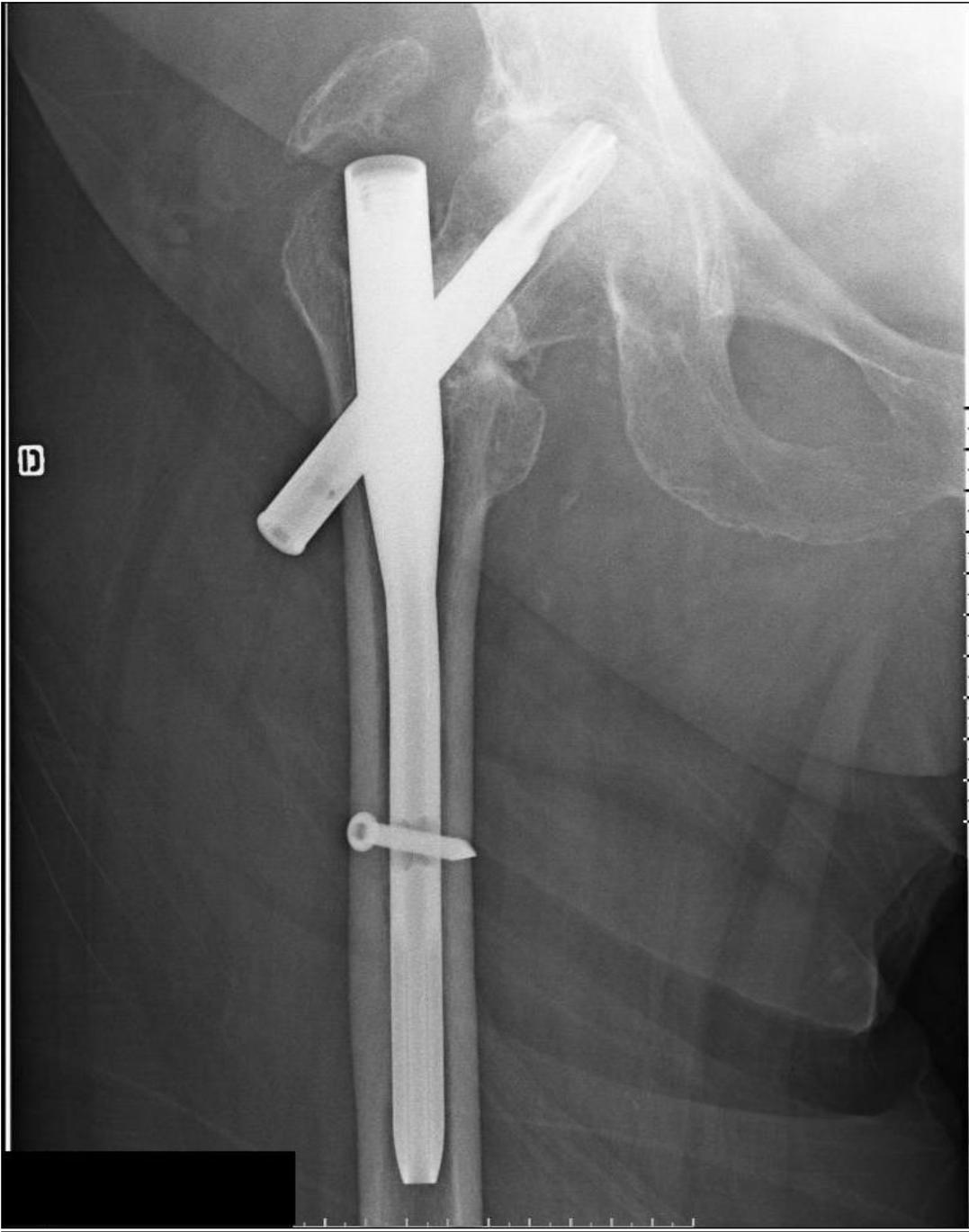


Illustration 2: Patient right hip radiography at the orthopedic consultation 8 days before THR surgery

(2015)