

Submission for The Knee

Title: Arthroscopic washout of the knee: A procedure in decline

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ABSTRACT

Background: Osteoarthritis (OA) of the knee is a chronic, progressive condition which often requires surgical intervention. The evidence for the benefits of arthroscopic debridement or washout for knee OA is weak and arthroscopy is currently only indicated in the UK if there is a history of mechanical locking of the knee.

Objectives: To investigate whether there has been any change in the number of arthroscopies performed in the UK since the 2008 Cochrane review of arthroscopic debridement for OA of the knee.

Methods: We interrogated data from the Hospital Episodes Statistics (HES) database with Office of Population Censuses and Surveys-4 (OPSC-4) codes pertaining to therapeutic endoscopic operations in the 60-74 years old and 75 and over age groups.

Results: The number of arthroscopic knee interventions in the UK decreased overall from 2000 to 2013, with arthroscopic irrigations decreasing the most by 39.6 per 100,000 population (80%). However, the number of arthroscopic meniscal resections, increased by 105.3 per 100,000 (230%) population. These trends were mirrored in both the 60-74 and 75 and over age groups.

Conclusions: Knee arthroscopy in the 60-74 and 75 and over age groups appears to be decreasing but there are still a large and increasing number of arthroscopic meniscal resections being performed.

INTRODUCTION

Osteoarthritis (OA) is the most common form of arthritis and one of the leading causes of disability worldwide.¹ It is a chronic condition characterised by pain, stiffness and reduced function. Pathologically, there is involvement of all joint structures but the key features of OA are a reduction in articular cartilage synthesis with an increase in cartilage degradation² together with changes in the subchondral bone.³ There is no single risk factor for the development of OA. It is a complex, multifactorial disease that occurs as a result of genetic predisposition,⁴ obesity,⁵ ageing⁶ and excessive joint loading.⁷⁻⁹ Epidemiologically, there is a strong female preponderance¹⁰ and there is

some difference in the prevalence between racial groups depending on the joint in question.¹¹ Although there are no recent estimates of the prevalence of OA, it may be as high as 8.5 million in the UK population.¹² Initial treatment currently focuses on conservative measures including analgesia with non-steroidal anti-inflammatory drugs (NSAIDs) and local muscle-strengthening exercise.¹ However due to the progressive nature of OA, these initial measures eventually become ineffective for most patients, in terms of pain control, functionality and overall quality of life.

Arthroscopic washout for knee OA is thought to offer short-term symptomatic relief by reducing the inflammatory response mounted against debris, such as articular cartilage fragments and crystals, which accumulate in the synovial cavity.¹³⁻¹⁴ Arthroscopic debridement is similarly thought to offer short-term pain relief as well as short-term increased function by resecting pathological structures such as unstable articular cartilage, proliferative synovium, torn menisci and osteophytes.¹⁵ However, a 2008 Cochrane review¹⁶ of the evidence on knee arthroscopy concluded that there is no benefit, functionally or in terms of pain relief, from arthroscopic washout or debridement for knee OA, when compared to each other or with placebo.

Based on the available evidence, the National Institute for Health and Care Excellence (NICE) issued the following guidance¹⁷ in 2007: "Referral for arthroscopic lavage and debridement should not be offered as part of treatment for osteoarthritis, unless the person has knee osteoarthritis with a clear history of mechanical locking". In the United States, there has been considerable discrepancy between actual clinical practice and the recommendation of the American Academy of Orthopaedic Surgeons against the use of arthroscopy for the treatment of knee OA¹⁸ as nearly 1 in 5 patients had potentially been inappropriately treated with arthroscopy for knee OA.¹⁹ To date, there has been no evaluation of the number of arthroscopic procedures performed in the UK on knee OA patients since the 2007 NICE guidance¹⁷ and 2008 Cochrane review¹⁶ on arthroscopy for knee OA. Therefore, in order to assess whether current clinical practice is in accordance with the latest guidance and evidence, we looked at the number of arthroscopic procedures performed since 2000.

METHODS

Data on arthroscopic procedures performed in the UK was obtained online from Hospital Episode Statistics (HES). HES is an annual collection of hospital records of all patients admitted to National Health Service (NHS) hospitals, including outpatient appointments.²⁰ OPSC-4 procedure codes were chosen based on those cited in the latest NICE guidance on arthroscopy for knee OA¹⁷ to identify arthroscopic interventions that were most likely to correspond to debridement and washout (Table 1). HES data prior to 2000 used different coding and therefore was not included. Data from the 60-74 year old and 75 and over age ranges were used as these age ranges are more likely to represent patients undergoing arthroscopy for OA.^{1, 21} The rate of each arthroscopic intervention per 100,000 population was calculated by dividing the number of procedures performed per year by the UK population for each year, based on yearly population estimates by the Office for National Statistics.²²

RESULTS

Between 2000 and 2013 there was a decrease in the number of most arthroscopic knee interventions being performed, except for meniscal resection, which increased. The largest decrease was in the number of irrigations performed, which fell by 39.6 per 100,000 (80%) (Figure 1). The smallest decrease, 0.94 per 100,000 (26%), was in the number of loose bodies removed, which remained almost constant from 2000 to 2013, except for a peak in 2008 (Figure 2). The number of other specified therapeutic endoscopic procedures initially increased and then decreased by 1.60 per 100,000 (43%) from 2000 (Figure 3). These trends were mirrored across the two age ranges for each code. The mean age for the different arthroscopic interventions remained similar from 2000 to 2013 (Table 1). The number of meniscal resections performed between 2000 and 2013 increased by 105.3 per 100,000 (230%) (Figure 4). Meniscal resection also had the largest absolute number of

procedures being performed compared with the other arthroscopic interventions (151.2 per 100,000 population).

DISCUSSION

The number of arthroscopies performed for knee OA appears to be decreasing. The increase in the number of arthroscopic meniscal resections is difficult to explain since it is well established that even partial meniscectomy is a risk factor for the development of OA.²³⁻²⁵ The NICE guidance and 2008 Cochrane review on arthroscopy for knee OA appear to have had more impact on debridement rather than washout rates, since washout rates have constantly declined from 2000 whereas the number of other specified therapeutic endoscopic operations increased up to 2006 and then subsequently fell afterwards. The continual decline in irrigation before the introduction of the NICE guidance may suggest that surgeons were already aware of the poor outcomes associated with arthroscopy for knee OA.²⁵ The peak in the number of loose bodies removed after the publication of the NICE guidance, however, is difficult to explain, especially considering the rate was almost constant before the guidance was published.

A well-designed, recently published randomised controlled trial compared arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear, in non-osteoarthritic knees. The authors randomised 146 patients to either partial meniscectomy versus sham surgery at arthroscopy. They found that there was no significant difference in outcome scores at 12 months after surgery between the two groups²⁶. It will be interesting to see if this paper leads to a reduction in the number of arthroscopic partial meniscectomy procedures performed for degenerative meniscal tears in the future.

Limitations of using HES data included the age ranges by which the data was organised, since patients were always categorised into 0-14, 15-59, 50-74 and over 75 years old, apart from the 2012

to 2013 data. As a result, some OA patients were excluded since OA can occur in patients younger than 60 years old. It was also not possible to exclude patients that were undergoing arthroscopy for reasons other than OA using HES data alone. The annual categorisation of procedures also made it difficult to look for more subtle changes, such as monthly variations and trends in the data. There was no data on the sex distribution for each age group for comparison. HES data also does not represent procedures done privately. Without information on the incidence of OA and other knee pathology such as meniscal tears it was difficult to adjust for potential confounders, which may have helped explain the trends observed.

CONCLUSION

There has been a steady decline in the number of arthroscopies performed in the UK on patients aged over 60. This may be as a result of NICE guidance and the 2008 Cochrane review which concluded that there was no benefit in performing arthroscopic debridement in undiscriminated OA of the knee. The increase in the number of arthroscopic meniscal resections performed may warrant further evaluation in its own right considering the potential adverse outcomes associated with meniscal resection.

FIGURES

Table 1: Procedure codes used for selecting data

OPSC-4 code	Description	Mean age
W82.2	Endoscopic resection of semilunar cartilage NEC	49
W85.1	Endoscopic removal of loose body from knee joint	42
W85.2	Endoscopic irrigation of knee joint	52
W85.8	Other specified therapeutic endoscopic operations on cavity of knee joint	49

Figure 1 : Number of arthroscopic irrigations performed from 2000 to 2013. 2007 arrow corresponds to introduction of NICE guidance and 2008 arrow corresponds to Cochrane review on arthroscopy for knee OA.

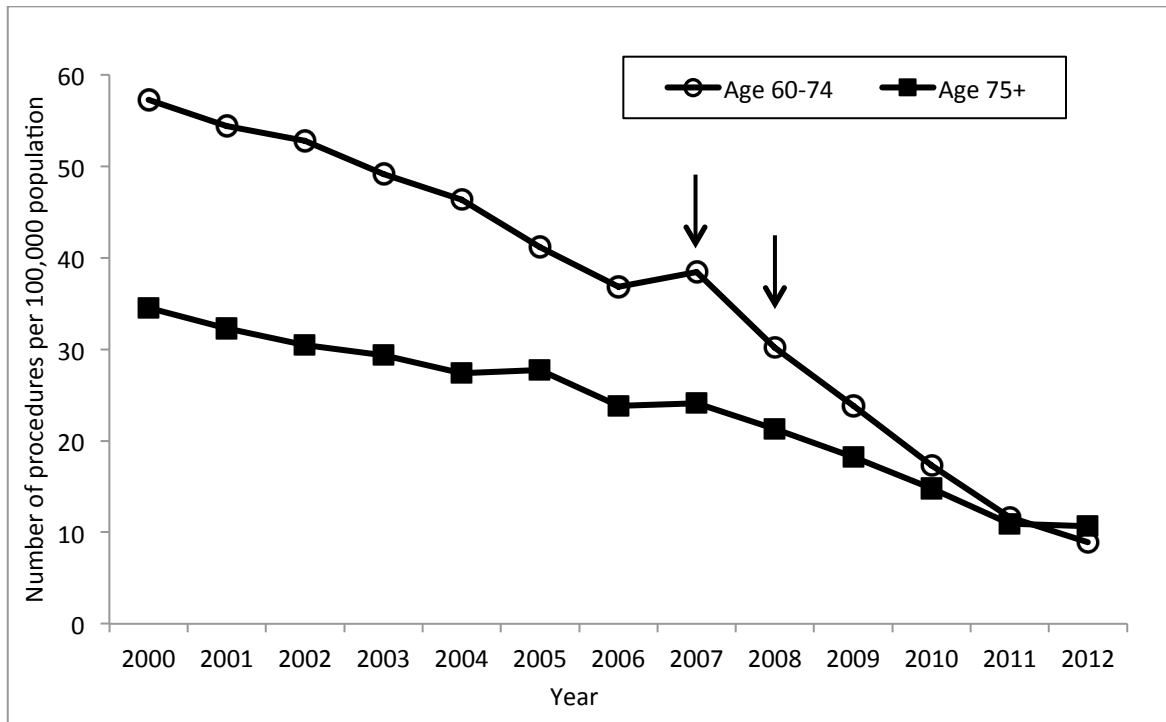


Figure 2: Number of arthroscopic loose body removals performed from 2000 to 2013. 2007 arrow corresponds to introduction of NICE guidance and 2008 arrow corresponds to Cochrane review on arthroscopy for knee OA.

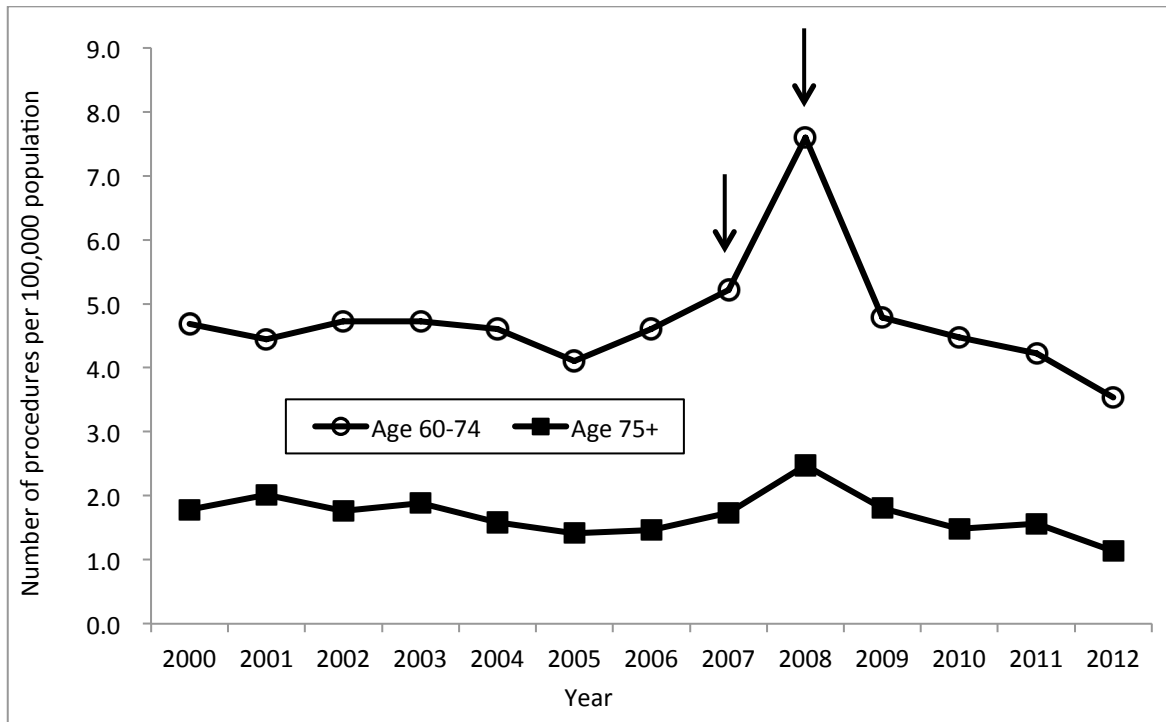


Figure 3: Number of other specified therapeutic arthroscopic performed from 2000 to 2013. 2007 arrow corresponds to introduction of NICE guidance and 2008 arrow corresponds to Cochrane review on arthroscopy for knee OA.

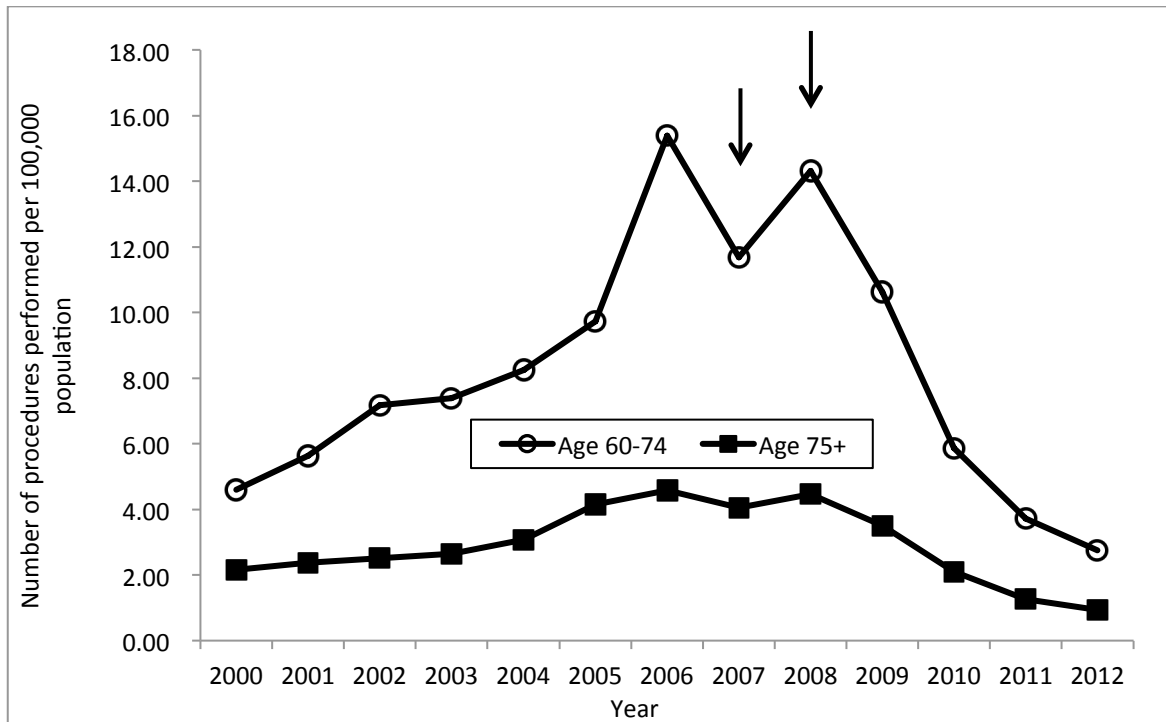
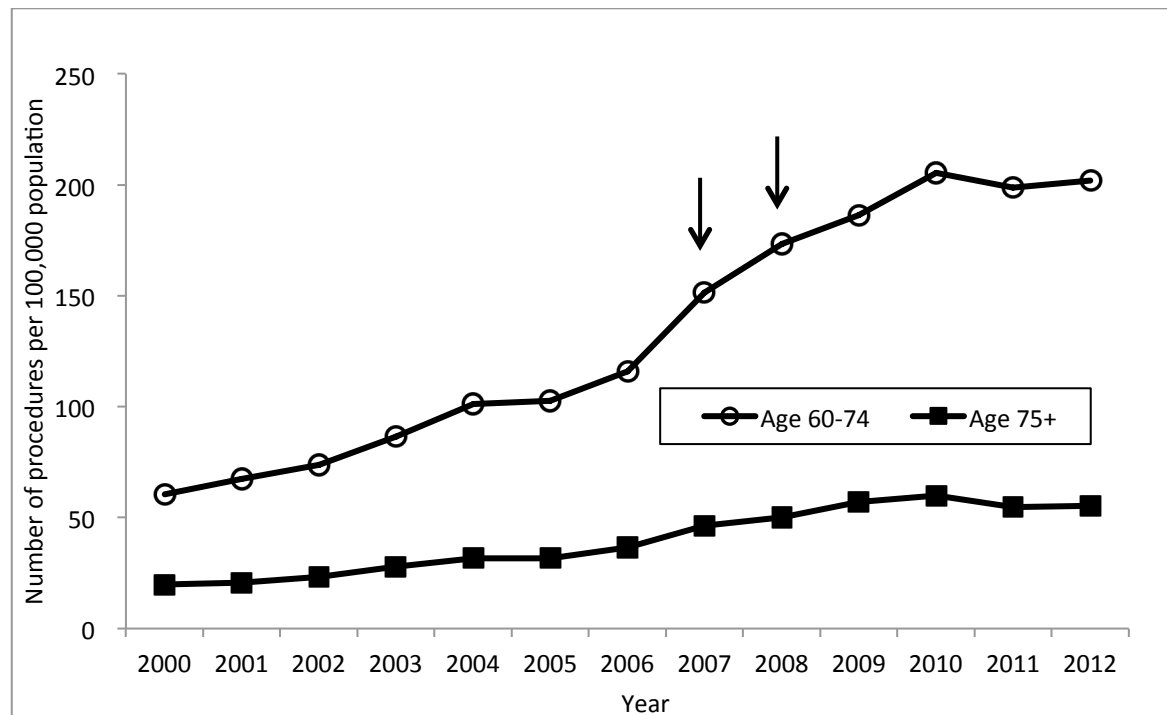


Figure 4: Number of arthroscopic meniscal resections performed from 2000 to 2013. 2007 arrow corresponds to introduction of NICE guidance and 2008 arrow corresponds to Cochrane review on arthroscopy for knee OA.



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Conflicts of Interest: The authors declare no conflicts of interest.

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