ARTHROSCOPIC SURGERY FOR DEGENERATIVE KNEE-CONTROVERSIAL ISSUE: A SYSTEMIC REVIEW

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INTRODUCTION
Arthroscopic knee surgery for degenerative knee disease is the most common orthopedic procedure in countries with available data, and on a global scale is performed more than two million times each year. It cost more than $3bn per year in the US alone(1,2), even so, its use in meniscal injuries has become increasingly controversial.


In the light of this evidence, what is a degenerative knee disease, what are the benefits and harms of arthroscopic knee surgery for middle aged or older patients with knee pain and degenerative knee disease?, if it is controversial why is arthroscopy still so common? , and is there a clear framework for the management of degenerative knee?

METHODES
we included only studies published in 2015 or later for benefits and harms of arthroscopic surgery, our aim was studies on middle aged and older patients, but we applied no restriction on age in the search as degenerative knee disease is rare before middle age. For the search we selected systemic wereviews and meta-analysis based on randomised controlled trials, we also allowed cohort studies, register based studies, cas series and consensus projects, excluding studies with concomitant cruciate ligament injuries.

DISCUSSION
Approximately 25% of people older than 50 years experience knee pain from degenerative knee disease (6).

A degenerative knee disease is an inclusive term, which many consider synonymous with osteoarthritis. We use the term degenerative knee disease to explicitly include patients with knee pain, particularly if they are >35 years old, with or without: (Imaging evidence of osteoarthritis, Meniscus tears, Locking, clicking, or other mechanical symptoms except persistent objective locked knee acute or subacute onset of symptoms). Most people with degenerative arthritis have at least one of these characteristics. The term degenerative knee disease does not include patients having recent debut of their symptoms after

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a major knee trauma with acute onset of joint swelling (such as haemarthrosis).(1) Arthroscopic knee surgery is frequently and increasingly used to treat middle aged and older patients with persistent knee pain, however in the last 20 years randomised trials have shown no added benefit for arthroscopic surgery over that of the control treatment (5), but still many specialists are convinced of the benefits of the surgical intervention.

- A meta-analysis study by Thorlund adds substantially to the debate by systematically reviewing all the evidence on the benefits and harms of arthroscopic knee surgery for middle aged and older adults with knee pain and degenerative knee disease. The authors report interventions that include arthroscopy are associated with a small benefit and with harms; the small benefit is inconsequential and of short duration, the benefit is markedly smaller than that seen from exercise therapy as treatment for knee osteoarthritis. These findings do not support the practice of arthroscopic surgery as treatment for middle aged or older patients with knee pain with or without signs of osteoarthritis (7).

- Other studies show the risks to undergo arthroscopic surgery for degenerative knee, such as a cohort study by Ronjen et al, 4674 participants, aged 45–79 were recruited to assess whether patients with knee osteoarthritis and whom undergo arthroscopic meniscectomy have an increased risk for future knee replacement surgery. The authors concluded that in patients with, or at risk for, symptomatic knee osteoarthritis arthroscopic knee surgery with meniscectomy is associated with a three fold increase in the risk for knee replacement surgery. These results therefore underpin the do-not do recommendation of NICE which recommends not to refer patients with osteoarthritis for arthroscopic surgery.

- A randomised controlled trial published in The BMJ in June 2016 found that, among patients with a degenerative medial meniscus tear, knee arthroscopy was no better than exercise therapy. This study adds to the body of evidence suggesting that the benefits of arthroscopy may not outweigh the burden and risks (8), an even update systemic review linked to the BMJ conclude that over the long term, patients who undergo knee arthroscopy versus those who receive conservative management strategies do not have important benefits in pain or function (9).

In the light of this evidence, why is arthroscopy still so common? In this issue we presents recent case series and register based studies of five European countries, all with national health insurance systems, high-quality administrative databases, and rather similar populations to quantify and characterize the dynamics of the current practice of arthroscopic surgeries for degenerative knee disease.

- Mattila et al. (2016) report on differences and changes in rates of arthroscopy due to degenerative knee disease and traumatic meniscal tears in Finland and Sweden between 1997 and 2012. They found that the arthroscopy incidence per 100,000
person-years was 2–4 times higher in Finland than in Sweden for both degenerative knee disease and traumatic meniscus tears. They also noted that although the incidence of arthroscopy for osteoarthritis decreased over time, the corresponding incidence for degenerative meniscus tears was essentially the same at the beginning and the end of the observation period, both in Finland and in Sweden. In Finland, the incidence of arthroscopic surgery for traumatic tears increased over time, but it remained stable in Sweden. Of further note was that every second meniscal tear was coded as traumatic in Finland, while the corresponding proportion in Sweden was 1 in 4. In their discussion, the authors note that it is unlikely that these differences reflect underlying differences in morbidity burden between the 2 countries, but rather reflect differences in physician beliefs about diagnosis and surgery indications, surgical coding practices, insurance policies, and patient attitudes. (4)

- Leander et al (2017 observational study from Switzerland) assessed a non-accident insurance plan of a major Swiss health insurance company for surgery rates of arthroscopic partial meniscectomy (APM), arthroscopic debridement and lavage in patients over the age of 40, comparing the years 2012 and 2015. In summary, results suggest that there is a high potential for inappropriate use of APM in Switzerland. The authors note in a fee-for-service system such as in Switzerland, every service is rewarded separately. Surgical action is thus financially encouraged while patients bear costs only partially. It appears that this hinders the timely implementation of new evidence. (3)

- Rongen et al (2018 observational study from Netherlands) used registry-based data on meniscal surgeries that originated from Dutch national hospital basic care registrations from 2005 to 2014. The most important finding of this study was that the incidences of meniscus surgeries decreased. This decrease was observed in all age groups, although the decrease in incidences was more pronounced for younger patients (aged less than 40 years) compared to middle-aged and older patients (aged 40 years and older). Moreover, the majority of meniscus surgeries were performed on middle-aged and older patients (aged 40 years and older). The author concluded that the decrease in incidence of meniscus surgeries observed in the current study may in part be explained by the introduction of a guideline for knee arthroscopy by the Netherlands Orthopaedic Association in 2010. (10)

This publications show a big controversy in the medical community. This was emphasised by B. Reider in his editorial entitled “To cut...or not to cut;” (11) “it is not surprising that we orthopaedic surgeons like doing orthopaedic surgery...but as ethical physicians, we only want to do so when it is the best interest of our patients.” These controversial exchanges have not always been useful to the clinician in his/her decision-making process concerning patients with a symptomatic degenerative knee. Therefore, there is a need for a more
uniform and clear consensus for arthroscopic treatment.

- the “ESSKA Meniscus Consensus Project” in 2016 is the first official European consensus on the management of degenerative meniscus lesions (DMLs), its main finding was that arthroscopic partial meniscectomy should not be proposed as a first line of treatment for degenerative meniscus lesions. Arthroscopic partial meniscectomy should only be considered after a proper standardised clinical and radiological evaluation and when the response to non-operative management has not been satisfactory. Magnetic resonance imaging of the knee is typically not indicated in the first-line work-up, but knee radiography should be used as an imaging tool to support a diagnosis of osteoarthritis or to detect certain rare pathologies, such as tumours or fractures of the knee. (12)

- BMJ published in 2017 an infographic work, that provides an overview of the benefits and harms of arthroscopy for degenerative knee arthritis and meniscal tears in standard GRADE format, the panel is confident that arthroscopic knee surgery does not, on average, result in an improvement in long term pain or function. Most patients will experience an important improvement in pain and function without arthroscopy. However, in <15% of participants, arthroscopic surgery resulted in a small or very small improvement in pain or function at three months after surgery—this benefit was not sustained at one year. In addition to the burden of undergoing knee arthroscopy (see practical issues below), there are rare but important harms, although the precision in these estimates is uncertain (low quality of evidence).(1)

the implementation of a practical and updated guidelines for degenerative knee management may contribute to a decrease in incidences of inappropriate arthroscopic surgery.

CONCLUSION
Arthroscopic surgery of degenerative knee is widely performed, despite accumulating evidence that questions the rationalization and effectiveness of this procedure, which demonstrates a delay in the dissemination, acceptance, and implementation of clinical evidence in the practice of arthroscopic surgery.

REFERENCES