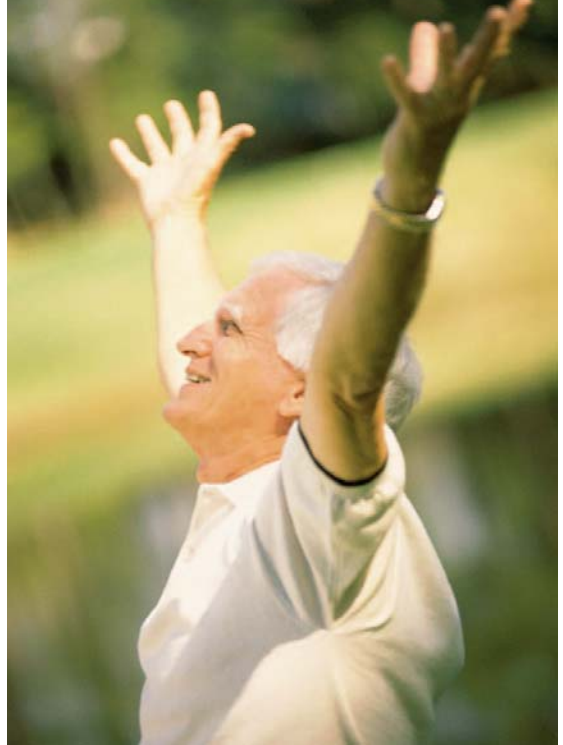

Taking the *ouch* out

A case study in osteoarthritis



By Martin Cohen, MD, FRCPC

Case

Mrs. Jones, 65-years-old, presents with a five-year history of progressively worsening pain in both of her knees. Her knees are stiff in the morning for about 20 minutes, and for a few minutes after getting up

from a chair during the day. She has difficulty walking for more than 30 minutes, using stairs, kneeling and squatting, as all these activities worsen the pain. The pain in her knees is greatly reduced when she is sitting or lying down. She feels worse on humid or cold days. She occasionally feels like one of her knees will “give out.”

Mrs. Jones is overweight. Both knees show signs of bony enlargement and tenderness to palpation over the joint line. There is mild warmth and soft-tissue swelling. When you move the knees there is palpable crepitus. She is unable to flex or extend her knees completely.

On further examination, you find she has a reduced range of motion in the cervical and lumbar spine, particularly in lateral bending. In her hands, you notice enlargement of some of the proximal interphalangeal joints (Bouchard’s nodes) and the distal interphalangeal joints (Heberden’s nodes). There is squaring at the bases of both thumbs (first carpometacarpal joints). In her feet, there is enlargement and reduced dorsiflexion of the first metatarsophalangeal joints. Further questioning reveals the patient experiences occasional pain and stiffness in these joints as well.

Radiographs of Mrs. Jones’ knees show osteophytes, joint space narrowing and subchondral bone sclerosis in both knees.

In this article:

- 1. What are the signs for osteoarthritis (OA)?**
- 2. What are the risk factors?**
- 3. How do I manage a patient with OA?**

Osteoarthritis

Table 1

Signs of OA

Bony enlargement
Tenderness at the joint margins
Limited motion
Periarticular muscle spasm, contracture and weakness
Joint instability
Crepitus
Misalignment
Pain on motion
Warmth and soft-tissue swelling if inflammation present

Table 2

Risk factors in OA

Obesity
Previous injuries
Occupation, such as farming and mining
Congenital abnormalities, such as genu varum or valgum, congenital hip subluxation
Female gender
Positive family history

How do I recognize OA?

Mrs. Jones suffers from a typical case of osteoarthritis (OA). OA is one of the most common causes of pain and disability in the elderly. It can be defined as a gradual loss of articular cartilage, combined with thickening of the subchondral bone or bony outgrowths (osteophytes) at joint margins, and mild chronic synovial inflammation.

The most common symptoms are pain, stiffness, and gradual loss of function (Table 1 & 2). The pain typically worsens with physical activity and improves with rest. If a patient experiences pain at rest, this signifies more severe disease. Morning stiffness usually lasts less than 30 minutes. Stiffness after periods of inactivity lasts only a few minutes. Pain is often worse in humid or cold weather. The pain of hip joint involvement is usually felt in the groin. When facet joint involvement in the cervical or lumbar spine causes narrowing of the intervertebral foramen, the patient may have radicular symptoms in the arms or legs consisting of pain, numbness, paresthesias, or weakness (Table 3).^{1,2}

Blood tests are usually normal in osteoarthritis, but may be useful in ruling out other causes of joint pain. Synovial fluid analysis generally reveals non-inflammatory joint fluid, which is viscous and transparent, with a white blood cell count less than 2,000 cells per mm³. Plain radiographs are usually sufficient for documenting the typical changes of osteoarthritis (Table 4). Magnetic resonance imaging (MRI) is more sensitive than traditional radiographs at detecting osteoarthritic changes. MRI is particularly useful in diagnosing osteoarthritis in the early stages of the disease because radiographs are sometimes normal.¹

How do I treat OA?

You explain to Mrs. Jones that she has osteoarthritis, which is a treatable but incurable condition. You advise her to lose weight and you refer her to a physiotherapist for instruction in quadriceps strengthening exercises. You prescribe



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a cane and elastic supports for her knees for use when she goes out. She asks you if there are any “natural” therapies which may be helpful. You explain that, although solid scientific proof is lacking, there is evidence that glucosamine sulfate and chondroitin sulfate may be helpful for pain reduction and retardation of joint damage.³

Mrs. Jones has been using acetaminophen which partially eases her pain. She has used traditional nonsteroidal anti-inflammatory drugs (NSAIDs) in the past but discontinued use because she developed abdominal pain. You recommend a cox-2 selective NSAID, such as celecoxib or rofecoxib, in addition to acetaminophen.

At the followup visit, the patient says the cox-2 selective NSAID you prescribed is helping, but she still suffers from pain when she walks for more than 30 minutes. Mrs. Jones is concerned because she would like to remain active. In addition, she has also started having pain in her knees at night, which disturbs her sleep. You prescribe a short-acting narcotic, such as codeine or oxycodone, to be taken at bedtime, and refer her to a rheumatologist.

When the rheumatologist evaluates Mrs. Jones, he confirms your previous findings. The narcotic you prescribed helps her fall asleep, but she still wakes up during the night with pain. The rheumatologist gives the patient corticosteroid injections in both knees and changes her narcotic to a long-acting preparation. When you next see the patient, she says the injections in her knees allow her to walk with less pain and she is sleeping better at night since changing to a long-acting narcotic.

What are the treatments for OA?

When treating osteoarthritis simple measures, such as assistive devices, physiotherapy and acetaminophen, are often helpful. Glucosamine sulfate and chondroitin sulfate are the subjects of an ongoing multicentre, randomised, placebo-controlled study, to settle the issue of their effectiveness in the treatment of OA (Table 5).

Cox-2 selective NSAIDs, such as celecoxib and rofecoxib, have a superior gastrointestinal safety profile compared to the traditional NSAIDs, and do not inhibit platelet function. They can be used in conjunction with low dose acetylsalicylic acid, anti-platelet agents and war-

Table 3

What are the most commonly affected joints?

Cervical facet joints
Lumbar facet joints
First carpometacarpal joints
Proximal interphalangeal joints
Distal interphalangeal joints
Hips
Knees
First metatarsophalangeal joints

Table 4

What you could see with X-ray?

Osteophytes
Joint space narrowing
Subchondral bone sclerosis
Subchondral cyst



Osteoarthritis

farin. Cox-2 selective NSAIDs offer no advantage over traditional NSAIDs in their effect on blood pressure, fluid retention or kidney function.⁴⁻⁷

Narcotics are gaining wider acceptance in the treatment of chronic pain and long-acting preparations can simplify the dosing regimen. The fentanyl patch is another alternative and should be changed every three days. Muscle relaxants are often help-

ful for spinal pain. Cyclobenzaprine usually causes somnolence, so it should be used at bedtime to help the patient sleep.

Corticosteroid injections are often used by rheumatologists. When used carefully, they can be safely repeated at regular intervals as determined by the age of the patient and the particular joint involved. In the case of Mrs. Jones, the injections could be repeated at three- to six-month intervals depending on her clinical response.

Intra-articular hyaluronic acid injections could be another alternative. They are more costly than corticosteroid injections and require three weekly injections. Their average effectiveness lasts about six months. There are multiple brands of hyaluronic acid on the market and with similar efficacy to corticosteroid injections.⁸ Topical therapies with capsaicin or NSAID-containing preparations are sometimes helpful as well.


When medical management is no longer effective at controlling the patient's pain, referral to an orthopedic surgeon should be considered for joint arthroplasty. This treatment is particularly effective for osteoarthritis affecting the hip or knee.⁹ 

Table 5

How to manage your OA patient

Patient education
Weight loss
Assistive devices
Physiotherapy
Acetaminophen
Nonsteroidal anti-inflammatory drugs (NSAIDs), including cox-2 selective NSAIDs
Narcotics including long-acting preparations
Intra-articular corticosteroid injections
Intra-articular hyaluronic acid injections
Topical therapy including capsaicin and NSAID preparations

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