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Aches, pains and osteoarthritis

Background
Aches and pains are commonly seen in general practice and osteoarthritis may be an underlying cause. Chronic pain can be very distressing for patients and management may be challenging for the general practitioner. Osteoarthritis is a common cause of chronic pain and disability.

Objective
This article looks at an approach to a patient with chronic aches and pains caused by osteoarthritis.

Discussion
Osteoarthritis is diagnosed clinically. Other causes of joint and bone pain such as inflammatory arthritis and malignancy should be excluded by history, examination and investigations. It is important to assess lifestyle factors, comorbid physical and psychological conditions, and social issues such as isolation and financial stress. Engagement by the GP, along with education, can empower the patient to access the right treatments and reduce pain and disability.

Case study

Claudia, 74 years of age, is a widow who presents to you on a Friday afternoon asking for help with her 'aches and pains'. She tells you she's 'probably just being neurotic' but the aches in her knees and lower back are really getting her down, and she's finding it hard to sleep. She says she knows there is no cure for arthritis, so she hasn't asked for help before, but she is now finding it harder and harder to cope with her pain.

You notice that Claudia seems a bit flat today, and a little teary but she says she's just 'fed up and frustrated' with the pain. She tells you it's been going on for years, and gradually getting worse, but she's been 'too busy to bother with it' until recently. Claudia has stiffness in the morning, and her usual walks are restricted by pain. The pain is occasionally worse at night but usually when she has been more active during the day.

Claudia is a long term patient of the practice, but you haven't seen much of her recently. She has stable hypertension, and is treated for hyperlipidaemia, but apart from regular prescriptions and monitoring of the blood pressure and lipid levels, she rarely presents. You remember that her husband Frank passed away 5 years ago, and Claudia was his long term carer. When you ask her about this, she tells you that caring for Frank involved lots of heavy lifting, and this was when her knees 'really started troubling her'.

On examination, Claudia is overweight, with a body mass index of 30.5, and is normotensive. Her knees have a mild restriction in the range of motion and pronounced crepitus. There is some tenderness laterally, which is worse on flexion, but no effusion.

Musculoskeletal 'aches and pains' are common in general practice.[1] When they become chronic, these symptoms can be very distressing for the patient, and management challenging for the general practitioner. Making a definitive diagnosis may be difficult, and evidence based treatment is frequently limited by other considerations such as comorbid disease states, the cost of physical therapies, and the usual challenges associated with lifestyle change such as weight loss.

In 2007, Access Economics estimated that 3.85 million Australians suffer from arthritis.[2] Prevalence is increasing, partly due to the aging of the population, but also to the increased prevalence of obesity. Arthritis costs $23.9 billion per year[2] and patients, carers and families suffer a significant burden of disease.

Mild and/or acute musculoskeletal 'aches and pains' can often be treated adequately with simple over-the-counter analgesia.

Chronic and disabling pain associated with osteoarthritis (OA) requires a shift in focus to longer term strategies for control of the disease. This requires assessment and modification of lifestyle issues, and consideration of longer term pharmacological disease modifying agents. To make this shift, patients such as Claudia need education about the disorder and ongoing support in adopting management.

Assessment

Making the diagnosis

According to Murtagh's diagnostic model,[3] the 'probability diagnosis' in Claudia's case is OA. She has a number of risk factors for OA, including age and being female, as well as the recent, repetitive, heavy lifting she was required to do as a carer (*Table 1*). She also demonstrates the clinical key features of OA: morning stiffness, painful joints on walking, and signs of crepitus and tenderness, without systemic signs such as fever (*Table 2*).

Osteoarthritis is diagnosed clinically; X-rays may support the diagnosis but are not required. However, X-rays and blood tests may be required to rule out serious causes such as cancer. Radiological changes occur late in OA and include decreased joint space and osteophytes. There is limited correlation between changes seen on X-ray and the presence of symptoms such as pain and impaired function.[4]

Labelling a patient with a diagnosis of OA has its limitations. There is no validated system of staging the disease, there is significant variation in patterns of diagnosis between GPs, and there is some question about the usefulness of the diagnosis to guide management. Peat points out that 'patients seek treatment for pain not osteoarthritis'.[5]

However, establishing a diagnosis that the patient identifies with has been associated with adherence and health outcomes across a range of chronic conditions.[5] Understanding of the cause of the pain and the purpose behind therapeutic modalities, such as weight loss and physical therapies, helps patient transition to self management and the adoption of important preventive strategies that decrease pain and improve quality of life.[6]

For Claudia, a diagnosis will allow her to identify with a support network such as Arthritis Australia[7] with access to resources, up-to-date information and personal support. In addition, a diagnosis will allow her to access additional resources under the chronic disease management billing systems in general practice.

Alternative diagnoses

There are a number of diagnoses that need to be considered when a patient such as Claudia presents with joint pain (*Table 3*).

- If the pain is mono-articular or acute, alternative diagnoses such as trauma, infection and crystal arthropathy should be considered[8]
- Systemic features such as fever or rash associated with a rise in inflammatory markers are unusual in OA, and suggest an inflammatory cause such as rheumatoid arthritis, seronegative arthritis, infections such as Ross River virus or polymyalgia rheumatica
- Arthritis confined to the spine may be due to spondylitis or osteoporotic fractures
- Spinal metastases should be considered, and a screen for the symptoms or signs of common cancers (eg. breast, bowel, lung, prostate) is justified in this age group.

Table 1. Risk factors for osteoarthritis[3]

- Female gender
- Older age
- Family history
- Excess weight
- Past history of joint trauma (including surgery)
- Joint misalignment
- Repetitive joint loading tasks (eg. kneeling, squatting, stair climbing)

Table 2. Clinical features of osteoarthritis[16]

- Joint pain with activity
- Transient stiffness in the morning or after rest
- Reduced range of motion
- Joint crepitus and/or peri-articular tenderness
- Bony swelling

Table 3. Features that may suggest a diagnosis other than osteoarthritis

- Age <40 years
- Mono-articular involvement
- Marked inflammatory signs in the affected joint (heat, acute tenderness)
- Systemic features (eg. fever, rash, weight loss)
- Raised inflammatory markers (osteoarthritis usually causes a mild increase)
- Acute pain with sudden onset
- Pain limited to the spine (consider spondylitis or osteoporosis)
- Family history of autoimmune disease, including rheumatoid arthritis

Comorbidities, education and lifestyle

Patients with OA will need to make significant life changes to manage their pain and loss of function. Assessment of current lifestyle and knowledge of local resources will help to tailor management to the patient. Care plans are excellent templates and allow GPs to set goals that are achievable in the patient's context.

There are many factors that can impede effective management of arthritis. These include:

- physical issues such as comorbid illness, obesity and poor mobility
- emotional issues including depression or anxiety, and
- social issues such as isolation and financial stress.

Patients may also hold unhelpful beliefs about their disease. In a recent United Kingdom study, patients with knee pain were asked what they felt was the matter with their knee. Patients described their disease as everything from 'crumbling bones' to 'old age' to 'muscle problems'. The level of agreement between the GP's diagnosis of OA, and the patient's use of the term OA was so poor it was no better than chance.[5] In this environment, it is not surprising that the goal of self management is difficult to achieve.

Useful areas to explore when assessing patients are listed in *Table 4*.

Case study continued

As Claudia has some pain at night, you decide to order X-rays and blood tests. X-rays of the knees show 'mild degenerative change'. Erythrocyte sedimentation rate (ESR) is slightly raised, but all other pathology is normal. You discuss the diagnosis, management options and available resources with Claudia in some detail and complete a GP Management Plan.

Management

Education

Education is the cornerstone of management for all chronic illnesses and in OA it is particularly important. Many of the treatment modalities for OA are accessible in the community without a doctor's involvement, and so patients need to make rational decisions about safety, efficacy and cost. These choices may include equipment (eg. mobility aids), over-the-counter pharmacological therapies (eg. nonsteroidal anti-inflammatory drugs [NSAIDs] and glucosamine), physical therapies (acupuncture, massage), and other techniques (eg. copper wrist bands, complementary medicines).

As GPs, it is important that we offer patients access to reliable and valid information so their choices are safe and effective. Useful sources of information include the Arthritis Australia website and printed materials including the consumer information provided by the Australian Institute of Health and Welfare[9] (see *Resources*).

Patients need to know that although OA is a chronic disease, symptoms and progression can be modified. Treatment includes local treatment (topical, physiotherapy, bracing) and systemic treatments (weight loss, increased activity, analgesia).

It is also important to offer emotional support and screen for depression. Depression and anxiety are common in patients with OA, and should be treated appropriately; one of the risk factors for suicide is chronic, unremitting pain.[10]

What works in the treatment of osteoarthritis?

Most patients with OA will use a combination of interventions (*Table 5*) via a range of allied health professionals, including dieticians, physiotherapists, exercise physiologists and psychologists. Chronic disease management systems in general practice may allow patients to access subsidised visits to allied health providers.

Mild symptoms

Weight loss

Prospective data from the Framingham heart study shows a clear

Table 4. Assessing health behaviours, health beliefs and context

Health beliefs What do you think is going on with your knee? What have you been told in the past?
Pain management How does the pain restrict your current activities? What strategies do you use to manage pain? How successful have these strategies been?
Pharmacological strategies Do you use any analgesics? Which do you use and how do you know when it is appropriate to use them? Do you use any other medication or supplements to help with the pain (eg. glucosamine, vitamin supplements)? How helpful have these been?
Help seeking Have you consulted any other health professionals to help you manage the pain in the past? Who have you consulted, and what has been the outcome?
Exercise What are your current exercise habits? Apart from the pain, are there other things that reduce your capacity to exercise (eg. shortness of breath, lack of access to appropriate facilities, poor motivation)?
Aids Do you use any appliances to help you undertake your usual activities (eg. mobility aids, splints, insoles)?
Education What do you think brings on the pain? What do you know about arthritis and how it is treated? Have you read about any treatments and what did you think about them?
Mood Has the pain been getting you down? How do you manage when the pain gets worse?
Carer support Who is around to help you if you need assistance (eg. transport, shopping, meals)?
Diet What is your normal diet like? Have you tried any weight loss strategies in the past? How successful were they? How do you feel about tackling weight loss?

Table 5. 10 recommendations for the treatment of osteoarthritis of the knee[12]

• Use a combination of nonpharmacological and pharmacological treatment modalities
• Tailor treatment of knee OA based on: – knee risk factors (obesity, physical activity, adverse mechanical factors) – general risk factors (age, polypharmacy, comorbidity) – level of pain intensity and disability – location and degree of structural damage
• Nonpharmacological treatment should include education, exercise, appliances and weight reduction
• Paracetamol is the drug of first choice and if successful, is the preferred long term analgesic
• Topical applications (eg. NSAIDS, capsaicin) have clinical efficacy and are safe
• NSAIDS should be considered in patients unresponsive to paracetamol. In patients with an increased gastrointestinal risk, gastroprotective agents should be used
• Opioid analgesics with or without paracetamol are useful alternatives in patients in whom NSAIDS are contraindicated, ineffective or poorly tolerated
• Glucosamine sulphate, chondroitin sulphate, diacerin, hyaluronic acid have symptomatic effects and may modify structure
• Intra-articular injection of long acting corticosteroid is indicated for flare of knee pain, especially if accompanied by effusion
• Joint replacement should be considered in patients with radiographic evidence of knee OA who have refractory pain and disability

association between obesity and OA of the knee and hip.[11] Studies of weight loss tend to be undertaken in conjunction with exercise, rather than weight loss alone, and so weight loss is only supported by relatively weak evidence. Nevertheless, as Jordan et al[12] state, it seems 'sensible' to recommend it.

Exercise

Joint specific strength and range of motion exercise and general aerobic conditioning have been supported by a number of randomised control trials,[12,13] including in elderly patients.[14] Muscle strengthening, particularly of the quadriceps, is particularly important. A number of exercise programs have been evaluated and shown to be of some benefit, including hydrotherapy and tai chi.[15]

Appliances

For patients with varus knee deformity, there is some evidence for valgus bracing and orthotics.[16] However, these appliances are expensive. Supportive footwear is also useful. Elastic bandages and walking sticks have not been studied in sufficient detail to make an evidence based recommendation but are used in conjunction with physiotherapy and exercise regimens in many patients.[12]

Glucosamine

Glucosamine sulphate 1.5 g/day may have a role in reducing symptoms and preserving joint function in knee OA.[17] However, a more recent Cochrane review found that it is not as effective as previously thought.[18] Glucosamine is expensive and should be used with caution in patients who are diabetic. However, it has a good safety profile and is reasonable to try if patients are willing to meet the over-the-counter costs. The effect of glucosamine may be delayed for a month or more after starting.

Moderate symptoms

The following strategies may be used in addition to weight loss and an exercise regimen.

Simple oral analgesics

Paracetamol is the recommended initial oral analgesic for knee OA, and there is good evidence that it is a safe and effective.[12] Nonsteroidal anti-inflammatory drugs can be considered in patients who do not respond to paracetamol, with the addition of a gastroprotective agent in patients with increased gastrointestinal risk.

Topical agents

There is good evidence for the efficacy of both capsaicin and topical NSAIDs, and both have a low incidence of side effects.[6,19]

Combination analgesics

The addition of opiate analgesics, alone or in combination with paracetamol, is necessary to control pain in many patients.[12] The side effects of these drugs, including dependence, should be considered.

Severe symptoms

Intra-articular corticosteroids

Intra-articular steroids are effective, but the benefits seem to wear off within months.[12]

Joint replacement

There is good evidence that joint replacement improves quality of life for those severely incapacitated by knee OA.[20]

Summary of important points

- Osteoarthritis is a common chronic disease associated with considerable pain and disability.
- Osteoarthritis is diagnosed clinically. X-rays and blood tests may be required to rule out other causes of joint pain.
- It is important to assess lifestyle factors, comorbid physical and psychological conditions, and social issues such as isolation and financial stress.
- Organisations such as Arthritis Australia have a key role in educating patients and health professionals about OA and in providing support.
- GP engagement and education can empower patients to access the right treatments and reduce pain and disability.

Resources

- Arthritis Australia. Available at www.arthritisaustralia.com.au/
- Australian Institute of Health and Welfare. A picture of osteoarthritis in Australia. Available at www.aihw.gov.au/publications/index.cfm/title/10456.

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References

1. Britt H, Charles J, Bayram C, et al. General practice activity in Australia 2006–07. Canberra: Australian Institute of Health and Welfare. 2008. Available at www.aihw.gov.au/publications/gep/gpaa06-07/gpaa06-07-c07.pdf [Accessed 8 September 2008].
2. Access Economics. Painful realities: The economic impact of arthritis in Australia in 2007.
3. Murtagh J. General practice. North Ryde: McGraw-Hill, 2007.
4. National Arthritis and Musculoskeletal Conditions Advisory Group (NAMSCAG). Evidence to support the National Action Plan for Osteoarthritis, Rheumatoid Arthritis and Osteoporosis. Canberra: 2004.
5. Peat G, Grieg J, Wood L, Wilkie R, Thomas E, Croft P. Diagnostic discordance: we cannot agree when to call knee pain 'osteoarthritis'. Fam Pract 2005;22:96–102.
6. American College of Rheumatology Subcommittee on Osteoarthritis Guidelines. Recommendations for the medical management of osteoarthritis of the hip and knee. Arthritis Rheum 2000;43:1905–15.
7. Arthritis Australia. Available at www.arthritisaustralia.com.au/.
8. Siva C, Velazquez C, Mody A, Brasington R. Diagnosing acute monoarthritis in adults: A practical approach for the family physician. Am Fam Physician 2003;68:83–90.
9. Australian Institute of Health and Welfare. A picture of osteoarthritis in Australia. Canberra: AIHW, 2007.
10. Commonwealth Department of Health and Ageing. Living Is For Everyone (LIFE) – A framework for prevention of suicide in Australia. Canberra: AIHW, 2007.
11. Felson DT, Zhang Y, Anthony J, Naimark A, Anderson J. Weight loss reduces the risk for symptomatic knee osteoarthritis in women. The Framingham Study. Ann Intern Med 1992;116:535–9.
12. Jordan K, Arden N, Doherty M, et al. EULAR recommendations 2003: an evidence based approach to the management of knee osteoarthritis: Report of a task force of the standing committee for international clinical studies including therapeutic trials. Ann Rheum Dis 2003;62:1145–55.
13. Roddy E, Zhang W, Doherty M, et al. Evidence-based recommendations for the role of exercise in the management of osteoarthritis of the hip and knee: the MOVE consensus. Rheumatology 2005;44:67–73.
14. MacLean C, Pencharz J, Saarg K. Quality indicators for the care of osteoarthritis in vulnerable elders. JAGS 2007;55:S383–91.
15. Brismee J, Paige R, Chyu M, et al. Group and home-based tai chi in elderly subjects with knee osteoarthritis: a randomized controlled trial. Clin Rehabil 2007;21:99–111.
16. Hunter DJ, Felson DT. Osteoarthritis. BMJ 2006;332:639–42.
17. McColl G. Glucosamine for osteoarthritis of the knee. Australian Prescriber 2004;27:61–3.
18. Towheed TE, Maxwell L, Anastassiades TP, et al. Glucosamine therapy for treating osteoarthritis. Cochrane Database Syst Rev 2005; Issue 1. Art. No.: CD002946. DOI: 10.1002/14651858.CD002946.pub2.
19. Altman R, Aven A, Holmburg C, et al. Capsaicin cream 0.025% as monotherapy for osteoarthritis: a double-blind study. Semin Arthritis Rheum 1994;23:25–33.
20. Chard J, Lohmander S, Smith C, Scott D. Osteoarthritis. Clinical evidence: A compendium of the best evidence for effective health care. London: BMJ Publishing Group 2002;1212–37.

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