Arthroplasty tourism

Ian K Cheung and Anthony Wilson

ABSTRACT

- The practice of "medical tourism" is gaining popularity.
- Lower costs and shorter waiting times are compelling motivating factors.
- There are also increasing commercial interests promoting medical tourism.
- There are very limited clinical data to support or refute this practice. However, medical tourism breaks important elements in the traditional health care model, including patient selection, continuity of care, and practice auditing.
- When complications arise, challenges specific to medical tourism patients may be encountered.

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At the global level, there has been a progressive liberalisation of trade in health-related services. The practice of "medical tourism" (ie, travelling to another country to obtain health care) appears to be gaining popularity. Cost savings are cited as an important reason for this trend, and the practice has been reported as an attractive option by health economists.[1] However, this same enthusiasm is not universally shared by the medical community. Data from clinical trials, case series and case reports on medical tourism are limited. Thus, most clinicians have been exercising caution in evaluating such options.

We describe here a case of a total knee arthroplasty performed overseas. The surgical site became infected with a *Mycobacterium* organism. On the patient's return to Australia, significant costs were involved in managing this complication. We also present a review of the practice of medical tourism.

Case report

An elderly man underwent a knee arthroscopy at our hospital. Osteoarthritic changes were noted, but their severity did not warrant arthroplasty at the time. The patient was advised to continue symptomatic treatment till the next scheduled review.

However, instead of attending this appointment, the patient had arranged for a total knee arthroplasty to be performed in India. He did so because of concern regarding the wait on the public hospital waiting list and the cost of the operation if done privately. The patient considered early return to work important, and thus deemed earlier surgical intervention desirable.

Three months after the operation, when the man was back home in Australia, features of a septic joint developed. Operative specimens demonstrated *Mycobacterium fortuitum* as the causative organism.

For this, our patient underwent four separate operations at our hospital. Firstly, an attempt to salvage the prosthesis was performed with a debridement and liner exchange. When the infection did not settle, a two-stage revision was undertaken, with an open biopsy in between to ensure eradication of the *Mycobacterium*. Meropenem and moxifloxacin were the main antimicrobials used.

Data obtained from our hospital's finance department suggested that the cost of the treatment exceeded $140 000. In contrast, our patient paid $8600 for the operation overseas.

Hospital costs aside, the long treatment period for this complication would have had a significant impact on the patient's own financial situation and general quality of life.

Discussion

Debate continues on the practice of medical tourism. A wide variety of services is available to people who wish to undertake treatment outside their own health care jurisdiction. The practice is a complex issue in which clinical, ethical and financial factors are at play. Furthermore, there are significant commercial interests now promoting medical tourism. We discuss aspects of this practice with regard to patient-initiated elective orthopaedic surgery.

From the patient's perspective, reasons cited in support of medical tourism include shorter waiting times and lower costs abroad.[2-4] Our patient chose to go for these reasons. Obviously, symptom severity and the degree of aversion to surgical risk will play a part in determining what waiting period is "acceptable" to a particular patient. In a survey of 142 patients waiting for total joint arthroplasty, Llewellyn-Thomas and colleagues found that 8 months was the mean length of time patients considered to be the maximal acceptable waiting period.[5] Unfortunately, waiting periods in some public hospitals exceed 8 months, and waiting on a surgical list is only one component of the entire waiting time in the patient's overall care.[6]

On the issue of willingness to pay, Cross et al surveyed patients who had already undergone total knee arthroplasties.[7] When asked how much they would have been prepared to pay *if* they had to personally cover the cost of the operation, only 18% indicated a figure in excess of $15 000 (the actual cost of a knee arthroplasty paid by Queensland Health). For the majority of patients, therefore, the lower cost of arthroplasty overseas is enticing.

In our case, the patient was actually advised by the local surgeon to maximise non-operative treatment. Instead, the patient proceeded with an arthroplasty through a medical tourism company. Admittedly, the knee did show evidence of abnormality, but an important issue needs to be raised. Careful patient selection is critical in ensuring good surgical outcomes. Here, both the overseas surgeon and the patient undermined the initial recommendations based on a long doctor–patient relationship and information obtained during the course of previous management, including the arthroscopic findings from a year earlier.

Another interesting point should be raised here: do the thousands of dollars spent by a patient in arranging an overseas consultation affect the decision to accept or decline surgical intervention? In other words, do finances play a greater role than they should in an otherwise clinical decision?

The issue of continuity of care is important. The surgery itself should be seen as one of many components in the patient's overall care. Other elements include the initial consultations, optimisation of non-surgical treatment, preoperative education programs, postoperative hospital and home rehabilitation, and long-term follow-up. The better coordinated these elements are, the more streamlined

the patient's overall care will be. Conversely, isolating the surgical component from the overall management plan may not be advantageous to the patient.

Of course, when procedures go smoothly, the place where an arthroplasty is performed is of little consequence. However, when complications occur, the medical tourism patient may face additional challenges. Fortunately, in the case of our patient, both the diagnosis of *M. fortuitum* and details of the primary prosthetic components were obtained within a reasonable time frame. However, it is not hard to imagine delayed microbiological diagnoses, given that mycobacterial infections are very uncommon in Australia, nor is it hard to imagine the potential difficulties in chasing up relevant data from an index hospital located overseas. Certainly, if such pertinent particulars cannot be obtained, the patient's care may be severely compromised.

Questions also need to be raised about who should bear the cost of such complications. Given that adverse events are likely to present acutely, as in the case of our patient with the septic joint, the local health care system ends up paying the costs by default. In this case, Queensland Health spent over $140 000 for the revision surgery and antimicrobial therapy. This figure is about nine times the cost of a primary arthroplasty performed at our hospital ($15 570 in 2005–2006). Although figures specific to Australia have not been reported, Herbert et al[8] and Lavernia et al[9] have suggested that infections associated with total knee arthroplasties consume three to four times the resources of a primary replacement. The much higher ratio reported here is partly attributable to the costly antimycobacterial therapy.

From a purely financial perspective — based on an approximate cost of $15 600 for a primary knee replacement performed in Australia and $8600 for one performed overseas — even if as many as one patient in 20 develops an infection, having the operation overseas is still an economically viable option. It is understandable why this prospect is so attractive to health economists. Mattoo and Rathindran raise the question, "Is health care so different from other goods and services that it cannot be regarded as tradeable?".[2] As surgeons, this stance would be deplorable. Our position as patient advocates would not be upheld if we considered health care in a similar perspective.

Although there are studies cautioning against the practice of "transplant tourism",[10,11] there is little evidence to support or refute the arthroplasty equivalent. Infection rates following total knee arthroplasty are reported in the literature to be 1%–2%, mostly attributable to gram-positive bacteria (*Staphylococcus aureus* and *S. epidermidis*).[12] The respective figure for medical tourism is unknown. Indeed, it would be difficult to set up studies to compare the safety of arthroplasty performed locally with that performed overseas. The process of auditing — another important aspect of any surgical practice — would be challenging for those offering arthroplasty to international patients.

If the procedure were performed locally, identifying the source of infection might be possible. On the other hand, it is extremely difficult to analyse the details of an overseas practice, and, in the unlikely situation that a root cause could be found, we would have little power to effect change in the clinical practice of the hospital abroad. Given the importance of the auditing process in improving our clinical work, any hindrances of this kind would make our job more difficult.

Although the quality of hospitals abroad will vary, we are not questioning that in this debate. The patient described here attended an overseas hospital accredited by the Joint Commission International. We also recognise the potential economic benefits for the patient that are associated with this practice. However, we question the wisdom of undertaking major orthopaedic surgery away from one's home environment, and draw attention to the unknown complication rates associated with this set-up. Finally, in the event that a complication does occur, we question the fairness of using resources that could fund joint replacements for multiple other patients to treat a single patient — especially one who has disregarded our own recommendations.

Conclusion

Medical tourism is becoming increasingly popular. Shorter waiting times and lower costs for services overseas are compelling motivating factors. There are certainly increasing commercial interests promoting medical tourism as well. As clinicians, we need to stay focused on why our "goods and services" should not be seen as tradeable assets. Although management of an infected knee joint was an expensive exercise, from our patient's viewpoint the non-financial costs were far more significant.

Competing interests

None identified.

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References

1 Carrera PM. Medical tourism [letter]. *Health Aff (Millwood)* 2006; 25: 1453.
2 Mattoo A, Rathindran R. How health insurance inhibits trade in health care. *Health Aff (Millwood)* 2006; 25: 358-368.
3 Arunanondchai J, Fink C. Trade in health services in the ASEAN region. Washington, DC: World Bank, 2007. (World Bank Policy Research Working Paper No. 4147.)
4 Srivastava R. Indian Society for Apheresis and apheresis tourism in India — is there a future? *Transfus Apher Sci* 2006; 34: 139-144.
5 Llewellyn-Thomas HA, Arshinoff R, Bell M, et al. In the queue for total joint replacement: patients' perspectives on waiting times. Ontario Hip and Knee Replacement Project Team. *J Eval Clin Pract* 1998; 4: 63-74.
6 Löfvendahl S, Eckerlund I, Hansagi H, et al. Waiting for orthopaedic surgery: factors associated with waiting times and patients' opinion. *Int J Qual Health Care* 2005; 17: 133-140.
7 Cross MJ, March LM, Lapsley HM, et al. Determinants of willingness to pay for hip and knee joint replacement surgery for osteoarthritis. *Rheumatology* 2000; 39: 1242-1248.
8 Herbert CK, Williams RE, Levy RS, Barrack, RL. Cost of treating an infected total knee replacement. *Clin Orthop* 1996; 331: 140-145.
9 Lavernia C, Lee DJ, Hernandez VH. The increasing financial burden of knee revision surgery in the United States. *Clin Orthop Relat Res* 2006; 446: 221-226.
10 Canales MT, Kasiske BL, Rosenberg ME. Transplant tourism: outcomes of United States residents who undergo kidney transplantation overseas. *Transplantation* 2006; 82: 1658-1661.
11 Kennedy SE, Shen Y, Charlesworth JA, et al. Outcome of overseas commercial kidney transplantation: an Australian perspective. *Med J Aust* 2005; 182: 224-227.
12 Rorabeck CH. Session IV: salvage of the infected total knee replacement. Infection: the problem. *Clin Orthop Relat Res* 2002; 404: 113-115.

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