

## CASE REPORT

# Complementary Medicine a Costly Risk in Management of Chronic Knee Osteoarthritis? A Case Report

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### ABSTRACT

Knee osteoarthritis is the commonest cause of knee pain in the elderly. It is characterized by unresolved pain, limitation of motion and reduced quality of life. Total knee arthroplasty (TKA) is a safe and effective method in treating chronic knee osteoarthritis. We report a rare case of a seventy-seven-year-old Chinese female with multiple comorbidities and bilateral degenerative osteoarthritis who had sought services of traditional and complementary medicine (TCM) for pain relief. The patient experienced unresolved pain and superficial skin scars following the unregulated procedure. This paper aims to outline the importance of awareness among surgeons regarding the unregulated practice of TCM that may exacerbate chronic osteoarthritis, joint synovitis, influence the surgical approach for future procedures with the presence of scars and prosthetic joint infection risk.

**Keywords:** Unregulated traditional and complementary medicine, Knee osteoarthritis, Prosthetic joint infection, Total knee arthroplasty, Perioperative risk factor

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### INTRODUCTION

Patients suffering from knee osteoarthritis (OA) often find relief from alternative therapies such as traditional and complementary medicine (TCM). World Health Organization (WHO) defined TCM as a group of various healthcare practices, approaches, knowledge and beliefs from various cultures to prevent, diagnose, improve or treat physical and mental illness (1).

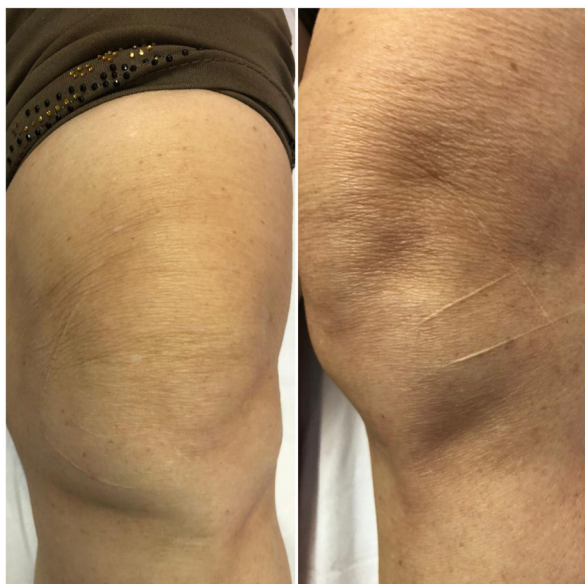
Most forms of TCM are accepted rarely as a part of conventional western medicine for the maintenance of well-being. TCM has always been a part of the Asian lifestyle and is well-received as the first treatment option due to cultural beliefs and its relatively low cost.

(2) Its use continues to grow for various illnesses with increased product accessibility and new era marketing strategy using social media. Asian culture frequently associates pain relief with TCM in the management of knee OA (2). Current clinical guidelines advocate total knee arthroplasty (TKA) as a safe, efficient and cost-effective method in treating chronic OA. Among the reported complications would include joint effusion, skin scarring, bleeding and increased perioperative risk of prosthetic joint infection (PJI) (2-3).

### CASE REPORT

We are reporting our experience managing a patient exposed to some form of TCM treatment before total knee replacement surgery. A seventy-seven-year-old woman with underlying hypothyroidism, dyslipidemia and coronary artery disease presented with unresolving left knee pain for four months. The pain was moderate, not localized and exacerbated on walking upstairs. Physical

examination showed bilateral bowed knees with fixed flexion deformity of 10 degrees, joint crepitus, effusion and medial joint line tenderness. Mild joint effusion was noted bilaterally with a negative patellar tap test. Two parallel horizontal surgical scars were noted over the left knee medial and lateral patella gutter, measuring 4 cm by 0.5cm (Figure 1). The range of movement of the left knee ranged from 10 to 120 degrees. Anterior and posterior cruciate and collateral ligaments stability tests were intact. There was no neurovascular deficit.



**Figure 1: Two superficial parallel horizontal scars over the medial and lateral aspects of the left knee**

Upon further history taking, the patient claimed that the scars over the bilateral knees were due to the TCM treatment she received before visiting the outpatient orthopaedic clinic. The TCM treatment involved applying superficial ointment, followed by scratching the skin with the tip of the sharp instrument and wrapping the knee with herbal leaves believed to be mallows (*Malva Neglecta*) for 20 minutes. Following the procedures, both knees developed scars. The patient reported that the TCM treatment only provided temporary pain relief. Scannogram radiographs of the left knee joint showed end-stage tricompartmental arthritic knee (Figure 2). She was diagnosed with tricompartmental left knee OA and prescribed acetaminophen with topical diclofenac gel. She was referred for intensive physiotherapy for muscle strengthening to improve the range of motion of the left knee. After a year of conservative management, the pain over bilateral knees persisted. However, the left knee was more painful than the right knee. The patient was counselled and agreed to left total knee replacement.

She underwent midline left total knee replacement surgery under general anaesthesia. The patient was noted to have abundant osteophytes and a contained osteoarthritic cyst on the medial tibial compartment intraoperatively. Furthermore, extensive suprapatellar synovitis and significant blood loss of 500ml despite using a tourniquet were noted. Hemostasis was secured



**Figure 2 : Preoperative standing antero-posterior and lateral radiographs of the left knee showing significant genu varus, reduced medial joint space and osteophytes which suggestive of severe osteoarthritis**

intraoperatively, and the drain was not inserted. On day one of postoperative, the dressing was noted to be soaked with blood which is likely due to postoperative hematoma formation along the surgical wound (Figure 3). However, her condition did not require the surgical evacuation of the hematoma or debridement of the wound. She was able to ambulate with a walking frame on day two of postoperative, the wound was dry, and she was discharged home well. Upon subsequent follow-ups at the Orthopaedic outpatient clinic, she was able to ambulate well without walking aid, with a good range of motion over the left knee and a well-healed scar. Postoperative radiographs during follow-up were acceptable (Figure 4).



**Figure 3 : Postoperative dressing was soaked with blood**



**Figure 4: Postoperative anterior-posterior and lateral radiographs of the left knee**

## DISCUSSION

In this case report, we would like to highlight some of the challenges faced by the operating surgeon, especially when managing the patients exposed to unproven TCM treatment before total knee replacement surgery. For this case, there was the presence of scar tissue over the incision site. These scars potentially compromise the vascular supply to the skin and subcutaneous tissues. This potential space lacks vascularity and circulating leukocytes, antibodies and complement systems, hence providing an ideal environment for the growth of bacteria. Thus, this may lead to an increased risk of prosthetic joint infection, which is a very costly and dreaded complication following total knee replacement surgery.

Furthermore, intraoperatively these patients tend to have more intraoperative blood loss, which may lower basal cortisol levels and possible altered skin flora. These would lead to a higher risk of prosthetic joint infection. Therefore, careful preoperative skin and soft tissue assessment, availability of blood products, use of prophylactic antibiotics, close monitoring on postoperative wound healing as well as educating patients on early signs of infection and understanding the severity of the prosthetic joint infection and its associated treatment option and the outcomes are important. Hence these factors should be considered during preoperative surgical planning, perioperative bleeding control and postoperative wound management.

Nevertheless, pain management is the mainstay of treatment in degenerative knee OA at the initial stage of the disease. A cocktail consisting of a short course of non-steroidal anti-inflammatory drugs, lifestyle modification, weight reduction, activity modification, intra-articular

cortisone injection and biologic therapy has had some success in dealing with the often-troublesome episodes of exacerbation of pain. Recent studies have shown compelling evidence on the potential use of TCM in alleviating pain in OA (4). Several natural products used in the TCM mode of treatment were shown to possess analgesic properties and suppress the pro-inflammatory pathways. These would include aconite root, *Salviae miltiorrhizae* and the combination of Twotooth Achyranthes Root, Chinese Angelica, *Salviae miltiorrhizae*, Safflower and White Peony Root (5). Integrative approaches have shown better disease-modifying strategies, which can improve the overall OA management. However, consistent evidence supporting the use of TCM in OA management is still lacking (5).

## CONCLUSION

Unregulated TCM practices in managing chronic knee arthritis are often underreported. These practices are a costly and avoidable risk to patient safety. This report highlights the importance of thorough past medical history, careful preoperative soft tissue assessment, perioperative optimization and close monitoring of the postoperative wound. Hence the need to increase awareness among the operating surgeon of possible complications when dealing with patients with a history of exposure to TCM treatment when planning for total knee replacement surgery.

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