Introduction:
The painful total knee arthroplasty (TKA) is often a diagnostic challenge. The etiology of pain can fall into several main categories:
1) Infection,
2) Kinematic conflict (gap imbalance),
3) Fixation failure,
4) Osteolysis phenomenon,
5) Extra-articular and
6) Hypersensitivity (i.e., metal allergy).

Hypersensitivity reaction in TKA is rare and difficult to diagnose. This study reviews a series of eight patients with documented hypersensitivity reaction.

Material:
In this study we evaluated 174 painful TKAs. Eight patients were identified as having a painful TKA as a result of hypersensitivity reaction. This was confirmed by a lymphocytic T-cell proliferation test (LPT), and excluding other causes of pain.

Symptoms:
Patients with hypersensitivity reaction all had common features:
1) they all generally had good functional knee range,
2) all presented with a painful ache that was noticed in the perioperative period and continued 24/7,
3) all patients had a recurrent effusion, and
4) all patients showed a significant response to LPT.

Results:
• Eight patients have been treated with revision TKA using Custom Titanium Alloy Femoral Component
• Four are awaiting revision surgery
• Two have declined surgery at present
• One patient is being treated with immune modulation with weekly methotrexate

Summary:
The diagnosis of hypersensitivity reaction (i.e., metal allergy) in TKA appears to be a distinct entity. Patients present with a syndrome of recurrent effusion and 24/7 pain. The LPT is a helpful tool in making a formal diagnosis. Revision TKA to commercially pure Ti implants improves function and pain. Suppressive immune modulation with methotrexate does help in patients who wish to postpone revision surgery.

Note: The FDA has not cleared the drug or device for the described purpose.