

FINAL MEDICAL REPORT

Patient	International patient (de-identified)	Case reference	Illustrative — no patient data
Attending physician	Adrián Rojas Torres, MD — Emergency Medicine	Consulting specialists	Orthopedic Surgery · Infectious Diseases
Facility	Accredited private hospital, San José, Costa Rica	Length of stay	8-day inpatient admission

1. Primary Admission Diagnoses

- Penetrating trauma to the knee.
- Contaminated knee laceration with dirt, gravel, and foreign-body exposure.
- Infected suprapatellar bursitis.
- Prepatellar foreign body.
- Soft-tissue infection and cellulitis involving the ipsilateral elbow, knee, ankle, and foot.
- Partial rupture (<30%) of patellar/quadiceps tendon insertion.
- Possible infectious tendinitis.
- Rule out septic arthritis of the knee.
- Polymicrobial post-traumatic soft-tissue infection.

2. Relevant Past Medical History

- Denies chronic medical conditions.
- Denies previous surgeries.
- No known drug allergies.
- No toxic habits.

3. Clinical Presentation

A previously healthy adult international patient who sustained blunt and penetrating trauma to the knee, associated with extensive contamination by dirt, gravel, and foreign material, following a recreational vehicle accident in Costa Rica.

The patient was initially evaluated at a peripheral medical center, where preliminary wound irrigation was performed. Due to concern for deep soft-tissue contamination and possible intra-articular extension, the patient was referred to an accredited private hospital for orthopedic evaluation, intravenous antibiotic therapy, surgical management, and inpatient observation.

Upon arrival, the patient was hemodynamically stable and neurologically intact. Physical examination demonstrated a penetrating laceration over the anterior aspect of the knee with surrounding cellulitis and significant contamination. Multiple abrasions were also identified across the extremities.

4. Initial Assessment on Admission

Vital signs

Hemodynamically stable throughout hospitalization.

Physical examination

- **General:** Alert and oriented, no acute distress.
- **Neurological:** GCS 15, no traumatic brain injury.
- **Cardiovascular:** Stable, regular rhythm.
- **Respiratory:** Normal cardiopulmonary examination.
- **Abdomen:** Soft, non-tender, non-peritoneal.

Musculoskeletal

- Penetrating contaminated wound over the knee.
- Cellulitis involving the ipsilateral elbow, knee, ankle, and foot.
- Multiple abrasions over upper and lower extremities.
- No neurovascular compromise.

5. Diagnostic Findings

Laboratory findings

Representative trend during admission (illustrative):

- CRP: progressive decline across serial measurements (mg/L).
- Leukocytes: normalization of leukocytosis across serial measurements (/ μ L).
- ESR, hemoglobin, platelets, INR, and prothrombin activity within monitored ranges.

Progressive laboratory improvement was documented during hospitalization, with decreasing inflammatory markers and normalization of leukocytosis.

Imaging / ultrasound

- Elbow: no tendon injury or articular collections.
- Knee: fluid collection within the suprapatellar bursa.

Microbiology

Cultures demonstrated a polymicrobial infection involving resistant gram-negative organisms and gram-positive flora. Blood cultures remained negative.

6. Surgical Management

The patient underwent orthopedic surgical intervention consisting of:

- Extensive surgical irrigation and debridement of the knee wound.
- Suprapatellar bursectomy.
- Removal of prepatellar foreign body.
- Tissue-culture sampling.
- Layered wound closure.

Operative findings included significant soft-tissue loss, infected suprapatellar bursitis, partial rupture (<30%) of the central quadriceps/patellar tendon insertion, and foreign material within the prepatellar region. The procedure was completed without immediate complications.

7. Infectious Disease Evaluation & Antibiotic Management

The patient was evaluated and followed by the Infectious Diseases specialist during admission. Due to preliminary microbiological identification of a polymicrobial infection with resistant gram-negative organisms, antibiotic therapy was escalated to intravenous vancomycin plus cefepime.

The infectious disease team concluded that the patient presented with polymicrobial infectious prepatellar bursitis and probable infectious tendinous involvement associated with traumatic tendon disruption. Given the severity of the infection, soft-tissue involvement, and resistant organisms, prolonged intravenous antibiotic therapy was considered medically necessary.

Final infectious disease plan:

- Continue intravenous vancomycin and cefepime during hospitalization.
- Continue outpatient intravenous ertapenem 1 g every 24 hours for 3 weeks.
- Oral ciprofloxacin 500 mg twice daily for 3 weeks.

Because the patient would return home while still requiring intravenous antibiotic therapy, urgent Infectious Diseases follow-up and coordination of outpatient parenteral antibiotic therapy (OPAT) in the home country was medically required to guarantee uninterrupted treatment. Failure to continue the prescribed regimen could pose significant risk of deep soft-tissue infection progression, septic arthritis, tendon infection, osteomyelitis, surgical-wound complications, and functional impairment.

8. Midline Catheter Placement

Due to the requirement for prolonged intravenous antibiotic therapy, a midline catheter was placed under strict sterile barrier precautions and ultrasound guidance. A double-lumen midline catheter was inserted using modified Seldinger technique; adequate antegrade and retrograde

flow through both lumens was confirmed, and imaging demonstrated adequate positioning. No complications occurred. The catheter was placed specifically to facilitate prolonged outpatient intravenous antibiotic administration following discharge.

9. Clinical Evolution

Day 1 — Admission after penetrating knee trauma; extensive contamination identified; IV antibiotic therapy initiated; orthopedic evaluation requested.

Day 2 — Symptomatic improvement with controlled pain; persistent cellulitis; ultrasound showed suprapatellar bursal fluid; orthopedic operative irrigation, debridement, bursectomy, and foreign-body removal performed.

Day 3 — Postoperative day 1; hemodynamically stable; pain controlled; improving leukocytosis.

Day 4 — Afebrile and tolerating oral intake; no wound dehiscence or worsening cellulitis; cultures revealed polymicrobial infection; ID consultation and antibiotic escalation initiated.

Day 5 — Significantly improved; hemodynamically stable and afebrile; resistant organisms identified; vancomycin plus cefepime initiated by ID.

Day 6 — Clinically stable with good pain control; surgical wound clean; inflammatory markers significantly improved; decision to place midline catheter for prolonged IV therapy after discharge.

Day 7 — Continues IV antibiotic therapy with favorable evolution; hemodynamically stable, afebrile, neurologically intact, pain controlled; wound without dehiscence or active drainage.

Day 8 — With maintained clinical stability, discharge planned. Given continuation of prolonged IV therapy and orthopedic limitations, a direct coordinated transfer from hospital to the international airport (SJO) was recommended, with medical airport assistance and wheelchair transport per Fit-to-Fly recommendations.

10. Current Clinical Status

- Hemodynamically stable · Afebrile · Neurologically intact.
- Pain controlled; favorable laboratory improvement.
- Recovering adequately following orthopedic surgical intervention.
- Continuing intravenous antibiotic therapy.

11. Discharge Treatment Plan

- Ertapenem 1 g IV every 24 hours for 3 weeks.
- Ciprofloxacin 500 mg PO twice daily for 3 weeks.
- Pantoprazole 40 mg PO daily for 1 month.
- Dextetopofen 25 mg PO three times daily for 10 days.
- Acetaminophen/codeine PO three times daily for 10 days.
- Probiotic 1 sachet PO twice daily for 3 weeks.
- Rivaroxaban 10 mg PO daily for 10 days.
- Vitamin C plus zinc 1 g PO daily for 1 month.

12. Orthopedic Recommendations

- Maintain knee immobilizer splint until orthopedic reevaluation (approx. 1 week post-discharge).
- Do not flex the knee until orthopedic reevaluation.
- Weight-bearing allowed with immobilizer in extension.
- Continue physical therapy after returning home.
- Suture removal approximately 3 weeks after surgery.
- Urgent orthopedic follow-up upon return home strongly recommended.

13. Fit-to-Fly Assessment (IATA Guidelines)

Cleared to fly under strict medical recommendations and special-assistance measures, per current IATA guidelines.

Recommended flight conditions:

- Depart from San José International Airport (SJO) rather than a distant airport, to avoid prolonged overland travel.
- Direct coordinated transfer from hospital to SJO on the day of discharge.
- Wheelchair assistance from check-in to boarding gate; priority boarding medically indicated.
- Avoid prolonged standing and airport lines; travel accompanied at all times.
- Business-class or equivalent seating allowing full extension of the affected lower extremity; seat near the restroom.
- Continue all prescribed medications during travel; maintain adequate hydration.
- Frequent ankle-mobilization exercises to reduce thrombotic risk; avoid knee flexion during transport.
- Carry all intravenous-medication documentation and catheter information during travel.
- Seek immediate medical attention if fever, increasing pain, drainage, redness, swelling, or neurovascular symptoms develop.

At the time of this report, the patient is hemodynamically stable, neurologically intact, clinically improving, and without acute contraindication for commercial air travel, provided all recommendations above are followed.

14. Prognosis

Favorable with appropriate multidisciplinary management, completion of prolonged antibiotic therapy, orthopedic follow-up, wound care, and rehabilitation. Orthopedic prognosis remains favorable, dependent on adequate infection control, tendon healing, and strict adherence to antibiotic therapy.

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