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Degenerative Osteoarthropathy With Dynamic Genu Valgum Following Osteomyelitis and Septic Arthritis of the Left Knee as a Sequela of a Wagner Grade 3 Diabetic and Charcot Neuroarthropathic Foot: A Retrospective Pathogenetic Case Report

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Abstract

A retrospective pathogenetic case report of a 60-year-old diabetic, hypertensive, and nephropathic male patient is presented herein, who, apart from experiencing repeated episodes of Wagner grade 3 bilateral infected diabetic foot ulcers (IDFUs) since 2016 with Charcot neuroarthropathy type 1, also presented with an extreme degree of degenerative osteoarthropathy of the left knee with acquired dynamic genu valgum (DGV). In 1992, his left knee had been severely injured in a motorcycle accident but had been inadequately managed at that time. In 2022, possible hematogenous dissemination to the left knee led to osteomyelitis (OM) of the bones forming the same joint and tricompartmental septic arthritis. Despite surgical intervention on the left knee at this juncture, the condition resulted in complete disorganization of the left knee, genu valgum, and a waddling gait. There was no direct tissue-to-tissue continuity between the infected diabetic left foot and the left knee infection, which lends credence to the less commonly described concept of hematogenous spread. The importance of this research area lies in emphasizing the pathogenesis of such knee infections and the extreme degree of knee degeneration and DGV resulting from an infected diabetic neuropathic foot. Such a case may require total knee replacement surgery for complete correction of the knee deformity, but with caveats. More reports of this type are required to determine whether this is a more common route of knee infection than generally described, originating from an infected diabetic foot, especially in a region of the world where diabetic foot infections are endemic.

Categories: General Surgery, Orthopedics, Anatomy
Keywords: asia sensory impairment scale, charcot's neurotrophic arthropathy, chronic osteomyelitis, degenerative osteoarthropathy, diabetic foot infection, dynamic genu valgum, hematogenous dissemination, septic arthritis, total knee replacement arthroplasty, wagner's grade

Introduction

In the clinical setting of infected diabetic foot ulcers (IDFU), the pathophysiology of contiguous tissue-to-tissue spread of infection within the foot itself is common and well-documented, leading to osteomyelitis (OM) of the foot bones and septic arthritis of the foot joints [1-3]. It can be accompanied by Charcot's neurotrophic osteoarthropathic foot (CNOF) because of diabetes-induced sensory impairment of the foot [4,5]. A fulminant IDFU may also cause bacterial hematogenous seeding of a remote joint, such as the knee. This is more likely to occur in children and the elderly, who are more likely to have reduced immunity. Prior injury to the remote joint, surgical intervention, or the presence of a prosthesis in the joint makes it more vulnerable to such hematogenous involvement, leading to septic arthritis and OM of the corresponding bones of the knee. It is hypothesized in this case report that this mechanism may be more common than generally documented [6-8].

A retrospective pathogenetic case report of a 60-year-old diabetic, hypertensive, and nephropathic male patient is presented herein, who, apart from experiencing repeated episodes of CNOF involving the toes of both feet [4] since 2016 and bilateral Wagner grade 3 IDFU (deep abscess, OM, and joint sepsis) [9], also had an extreme degree of degenerative osteoarthropathy with acquired dynamic genu valgum (DGV) of the left knee [10]. The left knee had been injured in a motorcycle accident in 1992 but had been inadequately managed because of insufficient medical facilities in the region at that time. In 2022, he developed tricompartmental septic arthritis and OM of the bones forming the left knee joint, possibly due to bacterial hematogenous dissemination to the left knee. Despite surgical intervention on the knee at this juncture, the condition resulted in chronic OM and degenerative osteoarthropathy of the tibia, fibula, and patella, as well as complete disorganization of the left knee, presenting with DGV and a waddling gait. The importance of this research area stems from the relative rarity of such pathogenesis of knee infection, or its reporting, and

the extreme degree of knee degeneration resulting from it.

The objectives of this hypothesis-generating single case report are: (A) to postulate that hematogenous dissemination to a previously compromised knee joint and its bones is possible in a patient with IDFU; (B) to reinforce that the complex architecture of the knee joint mandates that any injury to the joint should be expeditiously and comprehensively managed to obviate debilitating sequelae, especially in regions of the world where IDFU is quite endemic; and (C) to highlight the clinical importance of DGV and distinguish it from static genu valgum (SGV).

Case Presentation

A 60-year-old male patient with diabetes, hypertension, and nephropathy presented to the authors in September 2025 with a stapler-pin puncture-induced Wagner grade 3 IDFU [9] medial to the first metatarsophalangeal (MTP) joint of the right foot. Incision and drainage (I&D) of the abscess and wound debridement were performed under regional analgesia (RA) at that time in the surgical clinic of the local hospital.

His blood pressure ranged between 130/70 and 140/86 mmHg on successive days while receiving a beta-blocker (atenolol). His random blood sugar (RBS) levels were elevated and uncontrolled, ranging between 157 and 279 mg/dL on successive days. His WBC and platelet counts were elevated. His hemoglobin (HGB) and hematocrit (HCT) levels were low. His peripheral smear (PS) showed increased rouleaux formation and platelets, band forms, and a left shift. His renal panel showed elevated blood urea nitrogen (BUN) and serum creatinine levels and a decreased estimated glomerular filtration rate (eGFR) (Table *1*). Wound and blood culture and sensitivity test reports were unavailable.

Parameter	Patient's value	Units	Reference range
Hematology			
WBC	11.9 ↑	10^3/μL	4.0-10.0
RBC	4.12 ↓	10^6/μL	4.5-5.5
Hemoglobin (HGB)	11.3 ↓	g/dL	13.0-18.0
Hematocrit (HCT)	34.1 ↓	%	39.0-54.0
Platelets	574 ↑	10^3/μL	150-400
Lymphocytes	19 ↓	%	20-40
Renal panel			
Blood urea nitrogen (BUN)	31.3 ↑	mg/dL	7.0-18.0
Creatinine	2.8 ↑	mg/dL	0.5-1.5
Estimated glomerular filtration rate (eGFR)	28.2 ↓	mL/min/1.73 m²	>60

TABLE 1: Hematology and renal panel results.

Values above or below the reference range are indicated by upward and downward arrows, respectively.

He was prescribed an oral antibiotic (Augmentin 625 mg three times daily (TDS)), atenolol (beta-blocker), losartan (angiotensin receptor blocker (ARB)), and metformin (oral hypoglycemic agent (OHA)), along with vitamins and minerals. He required regular cleaning and dressing (C&D) of the wound for four months, which ultimately led to the resolution of this episode of care by December 2025.

The relevant past medical history pertains to both feet and the left knee. The patient was an upholstery (seat covers, sofa cushions, etc.) repairer by profession. His workshop was always cluttered with sharp hardware materials, including stapler pins. He had sustained several episodes of puncture wounds on both feet, followed by abscess formation and IDFU. The first instance that he could recall was in 2016, when he developed a similar injury and infection in his left foot in his workshop. This wound required several weeks of treatment comprising abscess I&D, wound debridement, and regular wound C&D. This was presumably a Wagner grade 3 IDFU [9] of the left foot, although no records were available. During this time, he was informed by the treating physicians that he had type 2 diabetes mellitus. He was prescribed an OHA (metformin) and advised to take precautions with his feet. He also realized for the first time that he had virtually no sensation in either foot, particularly on the soles.

In 2019, he developed another episode of injury and infection in his left great toe at the same workplace. This involved the bones of the left great toe, categorizing it as a Wagner grade 3 IDFU [9], although other written records were unavailable. This necessitated amputation of the affected toe at the MTP joint under RA (Figures *1A*-*1B*). These facts were gleaned mostly from the patient's narrative. There were no records of blood and wound culture reports.



FIGURE 1: Dorsal views of the patient's feet. (A) Right foot (left image); (B) left foot (right image).

Note the puckered and depressed scar at the site of amputation of the left great toe at the metatarsophalangeal (MTP) joint (Figure 1B). The right third toe is also missing (Figure 1A). Trophic changes are present in both feet (see text for further details).

In 2022, the patient presented with pain and swelling of the left knee. According to the patient's verbal account (since records were unavailable), I&D of the left knee was performed under general anesthesia (GA), leading to the evacuation of copious amounts of purulent material. No joint aspiration culture or blood culture and sensitivity reports were available. The patient was bedridden for 8-9 months during this episode of care, during which time the surgical wound healed with regular C&D (Figures *2A*-*2B*).



FIGURE 2: Views of the left knee in sitting (left image, Figure 2A) and standing (right image, Figure 2B) positions.

Note the deformity of the left knee and the curvilinear postsurgical scar on its medial aspect in Figures 2A and 2B. The scar is partially depressed in its upper portion.

Over the course of several months and years, up to the present, the patient developed progressive deviation and deformity of the left knee, with difficulty standing and walking. While standing and walking, he exhibited a right-sided pelvic tilt (Trendelenburg sign) (Figure *3A*). Even today, he has to wear a Velcro knee brace over the left knee while standing and walking, without which he experiences pain in the same joint (Figure *3B*).



FIGURE 3: Standing images of the patient without a knee brace (left image, Figure 3A) and with a knee brace (right image, Figure 3B).

The left image (Figure 3A) shows a right-sided pelvic tilt (Trendelenburg sign). Note also the extent of overlap of the left knee over the right knee, adduction of the left thigh, and abduction of the left tibia in the frontal plane. These findings indicate dynamic genu valgum (DGV). The right image (Figure 3B) shows the patient standing with a Velcro knee brace, without which he experiences pain (see text for further details).

In early 2025, the patient again sustained a penetrating injury to his right foot. According to the patient's written records, he was diagnosed with Wagner grade 3 IDFU involving the right third toe (deep abscess, OM, and joint sepsis) [9]. This necessitated amputation of the affected toe, including the head of the third metatarsal bone, under RA. The postsurgical photograph and anteroposterior (AP) and lateral X-ray views of the right foot are shown in Figures *1A* and Figures *4A*-*4B*.

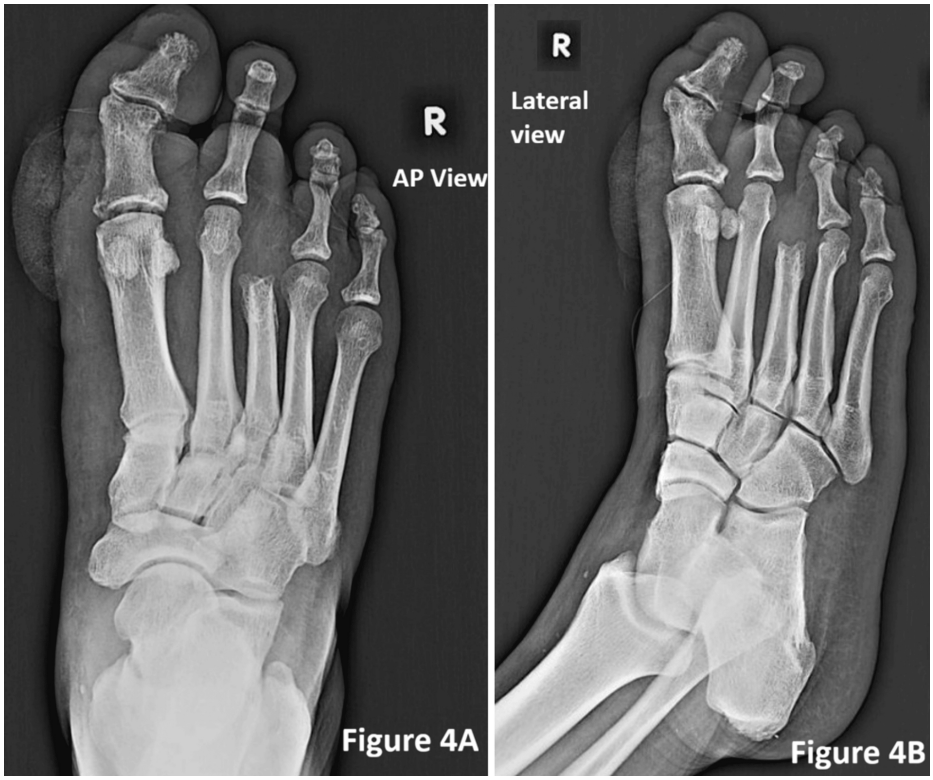


FIGURE 4: X-ray of the right foot in the anteroposterior (AP) view (left image, Figure 4A) and lateral view (right image, Figure 4B).

Both images (Figures 4A and 4B) show amputation of the right third toe, including the head of the third metatarsal bone; valgus deformity of the distal interphalangeal (DIP) joint of the great toe; varus deformity of the DIP joint of the little toe; subchondral sclerosis of the bones of the digits; and generalized osteoporosis of the foot bones. A calcaneal spur is visible in the right image (Figure 4B). Soft tissue swelling is present medial to the great toe, indicating the region of the infected diabetic foot ulcer (IDFU) in both images.

The other significant past medical history relevant to this retrospective case report pertains specifically to the patient's left knee. In 1992, he injured his left knee in a motorcycle accident while driving on a treacherous mountain road on an island while under the influence of alcohol. Due to inadequate medical facilities at the patient's place of residence, his injured left knee was improperly managed at that time. It took three weeks for the pain and swelling to subside, but the knee never completely healed. For months and years thereafter, whenever the patient performed any strenuous activity involving the left knee, he experienced pain that persisted for several days. All this information was gleaned from the patient's verbal account, since no written records of this episode were available.

The current examination by the authors revealed healed scars from previous IDFUs on both feet (Figures *1A*-*1B*). The right third toe was missing (Figures *1A* and 4A-4B). The right great toe had a valgus deformity at the distal interphalangeal (DIP) joint (Figures *4A*-*4B*). The left great toe had been amputated at the MTP joint, with the stump replaced by a puckered scar (Figure *1B*). The dorsum of both feet showed trophic changes (alopecia, desquamated epidermis, puckered scars, and distorted and discolored nails). The dorsal skin of both feet was warm to the touch. The dorsalis pedis and posterior tibial arterial pulses were feebly palpable in both feet. Both feet showed good superficial venous return (Figures *1A*-*1B*). Sensation was graded as '0' (sensation absent) on the soles and '1' (sensation impaired) on the dorsum of both feet, according to the American Spinal Injury Association (ASIA) chart [11].

The left knee was wider than the right knee by 1 inch at the femorotibial (FT) joint level, with the left and right knee circumferences measuring 17 and 16 inches, respectively. The left knee had a wide, curvilinear, puckered vertical scar along its anteromedial aspect, extending from above the patella to the FT junction (Figures *2A*-*2B*). On attempted active extension of the left knee, it could be extended to 5°. Active and passive flexion of the left knee were restricted to 70° and 80°, respectively. It had a genu valgum deformity of 20°, which was visibly more pronounced while standing and walking. The intermalleolar distance was 1.25 inches between the two medial malleoli in the standing position. There was wasting of the left quadriceps, with the left thigh circumference measuring 19 inches, compared with 22 inches for the right thigh, measured 6 inches above the patella. In the standing position, the left knee overlapped the right knee. There was adduction of the left thigh and abduction of the left tibia (Figures *5*-*6*). The right knee was normal in all

respects.



FIGURE 5: Oblique line drawn from the anterior superior iliac spine (ASIS) to the mid-patellar point (MPP) and a vertical line drawn from the MPP to the tibial tuberosity.

These lines were used to measure the static quadriceps angle (SQA), as demonstrated in the next figure. Note also the extent of overlap of the left knee over the right knee, adduction of the left thigh, and abduction of the left tibia in the frontal plane. These findings indicate dynamic genu valgum (DGV).

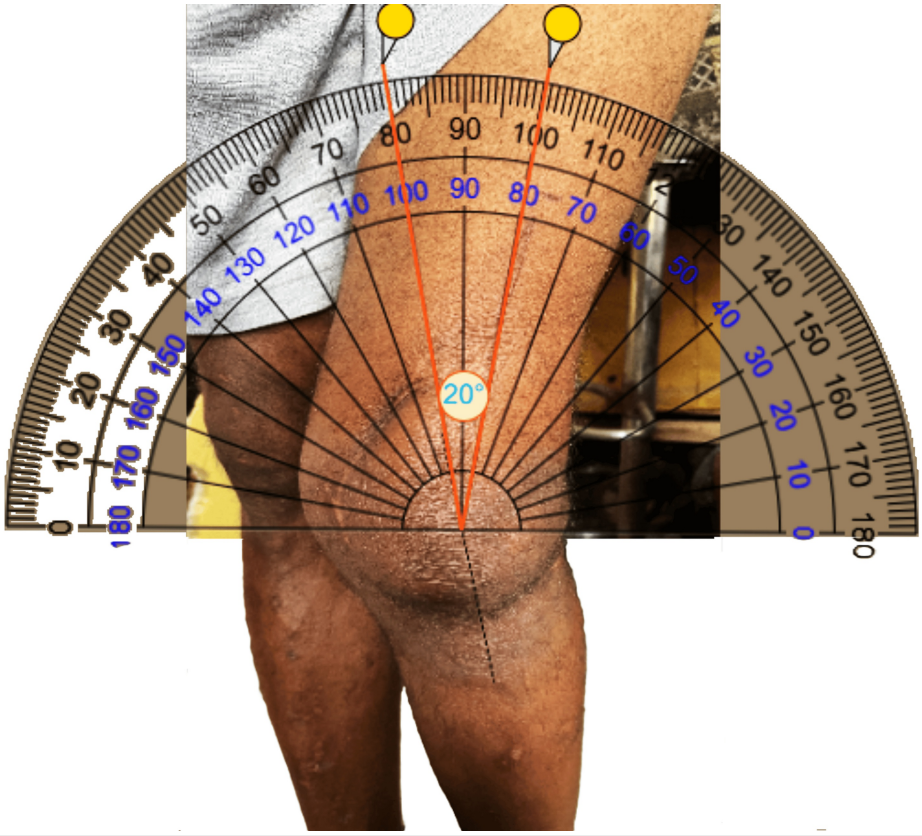


FIGURE 6: Static genu valgum (SGV) of 20°.

The angle between the oblique femoral line and the vertical mid-patellar line, as measured in situ using the online Ginifab protractor.

He had a waddling gait, more pronounced at the limit of its excursion, with a marked downward tilt of his pelvis toward the normal (right) side (Trendelenburg sign), measuring 20° when standing on his affected leg. His left gluteal muscle strength was recorded as grade 4 (muscle activation against some resistance, with a full range of motion) [12]. A video of his gait, viewed from the back and front, is shown below (Video *1*).



VIDEO 1: Subject's waddling gait and genu valgum.

The subject's gait is viewed from the front and behind. Note the waddling gait, dynamic genu valgum (DGV), and Trendelenburg sign (see text for further details).

Note: Video recorded using an iPhone 13 (Apple Inc., Cupertino, California, USA) and edited using Clipchamp (Microsoft Corporation, Redmond, Washington, USA). File format: MP4; file size: 45.8 MB; duration: 18 seconds; frame width: 1920 pixels; frame height: 1080 pixels; data rate: 20,057 kbps; total bitrate: 20,249 kbps; frame rate: 30 frames/second.

View video here: https://www.youtube.com/watch?v=iz3UkMhv1rw

An X-ray of the left knee obtained in late 2025 revealed severe osteoarthritic changes in the patellofemoral (PF) and both FT joints. Extensive marginal osteophytes were seen in the patella and both femoral and tibial condyles. Numerous intra-articular loose bodies were visualized in the PF compartment, particularly along

the medial femoral condyle. All joint spaces (PF, medial FT, and lateral FT) were severely narrowed, particularly on the lateral aspect. Subchondral sclerosis was seen in the patella and femoral and tibial condyles. Patellar tracking and alignment indicated a tendency toward lateral deviation without frank dislocation. Degenerative changes were also seen in both femoral and tibial condyles outside the joint spaces. There was evidence of chronic OM (cloaca, involucrum, and sequestrum) in the upper end of the left tibia, adjacent to the FT joint. Soft tissue swelling was seen around the PF joint, with evidence of myositis ossificans in the quadriceps above the patella. The upper end of the fibula showed disuse osteoporosis. There was a 20° valgus deformity of the left knee (Figures *7*-*9*).

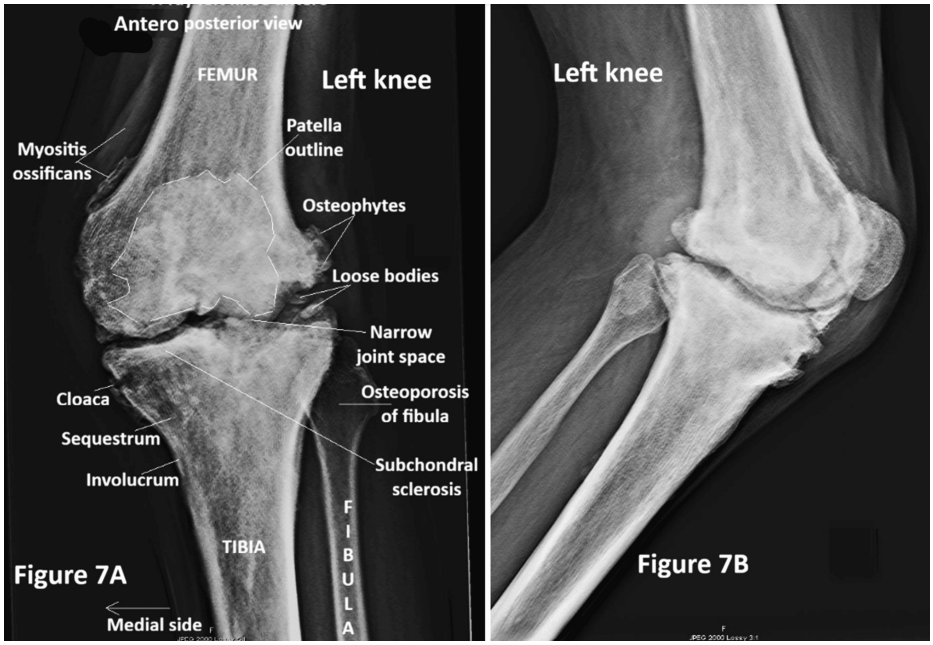


FIGURE 7: X-ray of the left knee in the anteroposterior (AP) view (left image, Figure 7A) and lateral view (right image, Figure 7B).

The deformed patella is outlined in the left image (Figure 7A). There is evidence of residual infection in the bones of the left knee (see the labels in Figure 7A and the text for further details).

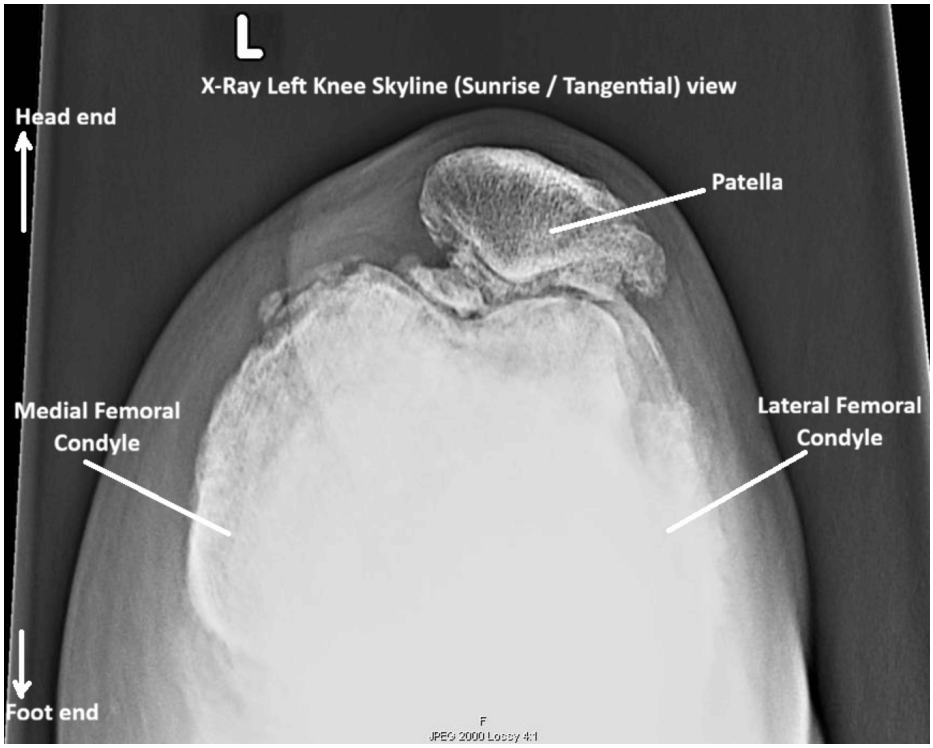


FIGURE 8: Skyline (sunrise or tangential) X-ray view of the left knee.

This provides a tangential, top-down view of the patellofemoral (PF) joint. The patient was lying supine, with the knee bent at a right angle. The X-ray cassette was positioned on the thigh. The X-ray beam was directed from below, passing tangentially over the patella (see text for details of the findings). Note the severity of PF osteoarthrosis.

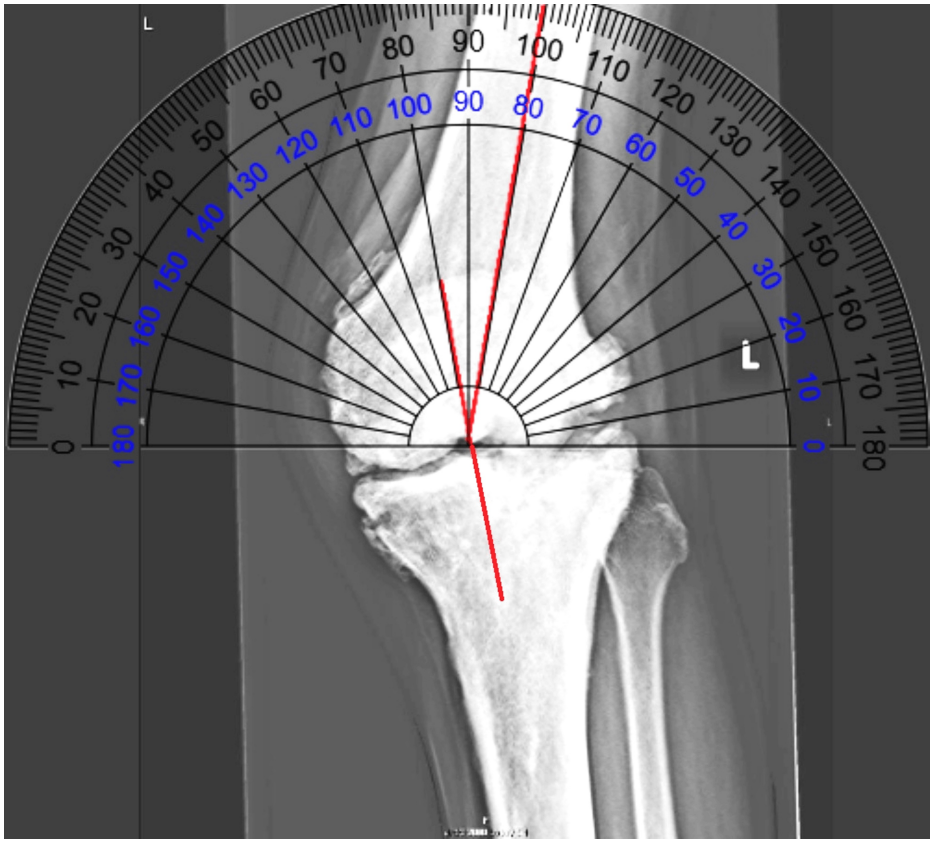


FIGURE 9: Measurement of static genu valgum (SGV) of the left knee using the online Ginifab protractor in situ.

An oblique line is drawn from the anterior superior iliac spine (ASIS) to the midpoint of the patella, and a vertical line is drawn from the midpoint of the patella to the tibial tuberosity. The measured SGV is 20° (see text for further details).

Timeline

The timeline of this case report, from the initial knee injury in 1992 to the last episode of infected diabetic foot ulceration in December 2025, is summarized below (Figure *10*).

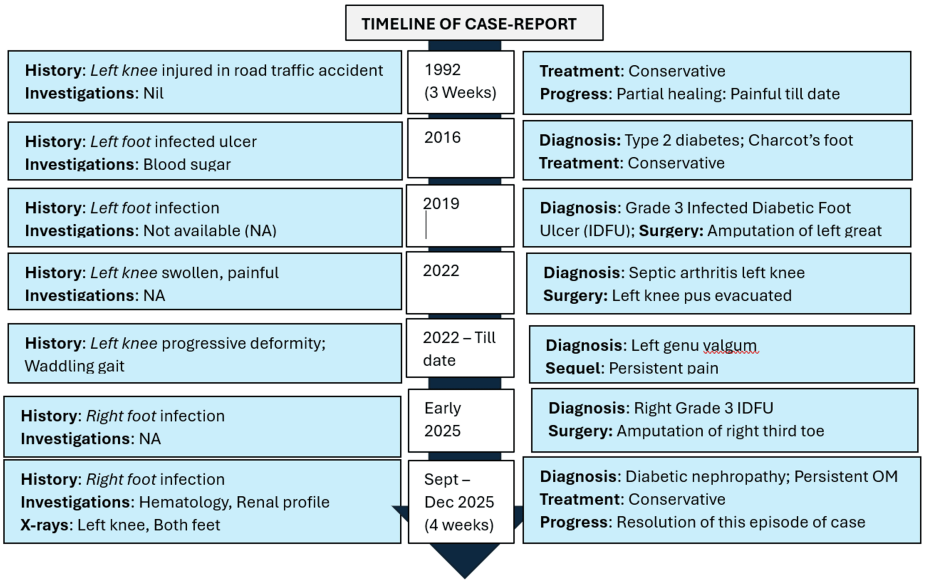


FIGURE 10: Timeline of the case report from 1992 to 2025.

Given these findings, the final diagnosis was CNOF type 1 (involving the foot phalanges), with recurrent bilateral Wagner grade 3 IDFU (deep abscess, OM, and joint sepsis), chronic OM, and degenerative osteoarthropathy of the left knee in a 60-year-old male patient with type 2 diabetes, hypertension, and nephropathy [4,9]. Currently, the patient is taking medications for diabetes (metformin) and hypertension (atenolol and losartan). He is using orthotic shoes and a Velcro knee brace while contemplating the surgical options (total knee replacement arthroplasty (TKRA) and osteotomy) that were explained to him [13,14].

Discussion

Hypothesized pathogenesis of knee degeneration

It is important to delve into the pathogenesis of the extreme degree of left knee degeneration associated with IDFU to prevent the occurrence of the same condition in other joints. This was a case of bilateral CNOF type 1 with recurrent grade 3 IDFU [4,9], with contiguous involvement of the bones of the feet over several episodes. This type of direct tissue-to-tissue involvement is the most common and well-documented and also forms the basis of Wagner's IDFU and CNOF anatomical classifications of the diabetic foot [4,9]. However, there was also circumstantial evidence of bacterial hematogenous dissemination to the left knee joint from grade 3 IDFU in our subject. There was no contiguous tissue-to-tissue spread of infection between the left IDFU and the left knee joint. The latter had been compromised in an accident in 1992 and was inadequately managed at that time. The literature is relatively sparse on this mode of major joint involvement. This occurs most commonly in the elderly, young children, patients with diabetes, patients with knee prostheses, and those with prior trauma or surgical intervention involving the knee [5-8]. Equally informative is the extreme degree of left knee degeneration seen in our subject and the evidence of residual chronic infection in the bones forming the knee joint (Figures *7A*, *7B*).

Charcot's neurotrophic osteoarthropathic foot

Our subject had ASIA grades 0 to 1 sensory loss in both feet [11]. Additionally, he had undergone amputation of the left great toe at the MTP joint and the right third toe, including the head of the third metatarsal, and had a valgus deformity of the right great toe at the DIP joint. The Sanders and Frykberg classification specifies five anatomical locations of Charcot's neurotrophic osteoarthropathy of the foot (CNOF) [4]: (1) metatarsophalangeal and interphalangeal joints; (2) tarsometatarsal joints; (3) intertarsal joints; (4) ankle and subtalar joints; and (5) calcaneus. According to this anatomical classification, our subject had CNOF type 1 [4].

Q-angle and static vs. dynamic genu valgum

'Q' in the term 'Q-angle' refers to 'quadriceps'. The term was coined either by Brattström in 1964 or by Cruveilhier in 1847 [10]. The Q-angle is defined as the angle formed between an imaginary line connecting the anterior superior iliac spine (ASIS) to the patellar midpoint and a line running from the latter point to the tibial tuberosity, as demonstrated in Figures *5*, *6*, and 9 in this case report. The Q-angle is the resultant of the forces of the quadriceps and ligamentum patellae acting on the patella in the frontal plane. This definition is typically used for the static Q-angle (SQA) [10,13].

Our subject had a Q-angle of 20°. Q-angles of >18° are associated with genu valgum (knock-knees), chondromalacia patellae, patellofemoral pain (PFP), recurrent patellar dislocations or subluxations, and anterior cruciate ligament (ACL) injuries [13]. When a knee is malaligned in this manner, it disrupts the body's weight-bearing line, shifting the load from the mid-patellar line (center of the joint) to the lateral FT compartment. Eventually, this causes cartilage wear and tear, leading to lateral FT compartment osteoarthrosis. It also leads to patellar instability; the inward angle of the knee causes the patella to track improperly, resulting in patellar wear and chronic PFP. It also leads to tibial collateral ligament (TCL) strain; the latter becomes stretched, causing joint instability, while the lateral soft tissues become tight. Finally, it causes gait abnormalities, usually in the form of a 'waddling gait'. Our subject had all of these disabilities and impairments [13,14].

It is increasingly being recognized that SQA has limited practical utility from a dynamic perspective. Recently, the dynamic Q-angle (DQA) has been considered a better indicator of PFP and other dynamic loading characteristics of the knee. DQA is defined as the Q-angle measured through the flexed knee joint, with or without dynamic activity. DQA is characterized by (A) hip adduction and internal rotation and knee abduction in the frontal plane; and (B) hip internal rotation and net tibial external rotation in the transverse plane, with the lower limb fixed on the ground. Both of these lead to patellar malpositioning and are better markers of patellar behavior. Therefore, DGV assessment should be used in clinical practice [10]. Examination of the gait and stance of our subject demonstrated these features. The genu valgum in our subject was attributable to fragmentation of the lateral femoral condyle and quadriceps myositis ossificans and atrophy (Figure *7*). The pelvic tilt and waddling gait were due to secondary weakness of the superficial gluteal muscles. The thickening of the left knee was due to involucrum of the tibia and femur as a sequela of past OM. His persistent PFP prompted him to wear a Velcro knee brace when in an upright position.

Diabetic nephropathy

With an eGFR of 28 mL/min/1.73 m^2 (normal >60 mL/min/1.73 m^2), our subject had CKD, most probably due to diabetic nephropathy. The latter was associated with elevated BUN and creatinine levels and a markedly reduced eGFR (Table *1*). Creatinine clearance (CrCl) (normal >97 mL/min in males) can be calculated in males using the Cockcroft-Gault (CG) equation.

$$\text{CrCl} = \frac{(140 - \text{age}) \times \text{weight (kg)}}{72 \times \text{serum creatinine (mg/dL)}}$$

Where W = weight (kg) (subject's value = 73), A = age in years (subject's value = 60), and C = serum creatinine (mg/dL) (subject's value = 2.8). This equation gives the subject a CrCl value of approximately 29 mL/min. CrCl is an approximation of, but is not the same as, eGFR [15]. Both values indicated compromised renal function in our subject. The low HGB and HCT levels in our subject may be attributed to decreased renal production of erythropoietin resulting from diabetic nephropathy.

Chronic infection vis-à-vis blood studies

The subject's blood studies also indirectly indicated chronic and persistent infection (Table *1*), supported by the X-ray findings of the knee (Figure *7A*). Chronic infection in the bones of his knee may have stimulated the production of excessive amounts of fibrinogen and globulins (inflammatory proteins), which, in turn, caused his RBCs to form rouleaux. Simultaneously, inflammation may have triggered the release of IL-6, which signaled the bone marrow to produce more platelets, leading to thrombocytosis. Furthermore, during illness, the body requires WBCs faster than the bone marrow can mature them, causing it to release neutrophil precursors (band neutrophils), leading to 'bandemia'. Similarly, the 'left shift' indicated the presence of immature WBCs in the blood, which may indicate active bacterial infection [16,17]. This chronic and persistent infection may impact our subject's future prognosis.

Further management and prognosis

The question that requires an answer is what the prognosis is in terms of our subject's future quality of life. It may be tempting to state that TKRA will provide a complete cure. Apart from the usual antidiabetic and antihypertensive medications and diabetic foot care, he will require debridement of residual infection and sequestrectomy. He will also require improvement in renal function. Thereafter, a staged knee revision may be appropriate. A limited surgery, such as an osteotomy, is also worth considering. It may help to realign the knee and partially alleviate the genu valgum, waddling gait, and PFP. He will also require extensive physiotherapy of the quadriceps and gluteal muscles to maintain alignment [14].

Limitations of the study

This was a single case report with no controls, missing records, recall bias, no culture reports, no histopathology, limited dynamic gait analysis, no standardized functional scores, and no imaging of other major joints. Therefore, the hematogenous dissemination mechanism remains hypothetical. However, this case report points us in a potentially useful direction in a region of the world where CNOF and IDFU are endemic. It may be worthwhile to explore this pathogenetic mechanism of the spread of infection from recurrent IDFU to major joints of the body (hip and knee) through further studies of this nature, preferably

in the form of case series, as done by He R et al. [6].

Conclusions

This retrospective case report helps illustrate that recurrent IDFUs may result in hematogenous seeding of bacterial infection to remote joints, such as the knee. It emphasizes the importance of aggressive management of IDFUs from the outset. It also reinforces the fact that the complex architecture of the knee joint mandates that any injury to the joint should be comprehensively investigated and expeditiously managed to prevent debilitating sequelae, especially in regions where diabetic foot infections are endemic. Furthermore, the presence of residual infection may preclude major surgical interventions, such as total knee replacement arthroplasty. Instead, a more limited intervention, such as osteotomy, may be feasible, followed by extensive physiotherapy and gait training. Further studies in the form of case series are required to validate the findings of this study.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Sanjoy Sanyal, Thomas K. Thomas, Zahangir Boksh

Acquisition, analysis, or interpretation of data: Sanjoy Sanyal, Thomas K. Thomas, Zahangir Boksh, Vinus Gera, Mariam Shafqat

Drafting of the manuscript: Sanjoy Sanyal, Thomas K. Thomas, Zahangir Boksh, Vinus Gera, Mariam Shafqat

Critical review of the manuscript for important intellectual content: Sanjoy Sanyal, Thomas K. Thomas, Zahangir Boksh

Supervision: Sanjoy Sanyal

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. All Saints University School of Medicine Institutional Review Board issued approval IRB Reference No.: ASUSM2026-02. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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