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Congenital Absence of Bilateral Patella in an Active Military Personnel Case Report

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Learning Point of the Article:

Congenital absence of bilateral patella is a rare entity and incidental finding in an active serving asymptomatic military personal.

Abstract

Introduction: Congenital absence of the patella refers to a condition where an individual is born without the patella. It may be bilateral or unilateral. It is an extremely rare condition and when present, mostly occurs as part of syndromes, such as the Nail-patella syndrome, small patella syndrome, trisomy 8 mosaicism, and Meier–Gorlin syndrome.

Case Report: We are presenting 35-years-old free medically, active soldier referred to the orthopedic clinic from family medicine after noticing abnormal incidental findings on X-rays. On inquiring him, he doesn't recall any problem during his childhood and performing his military duties. On clinical examination of the patient, he had characteristic features of patellar absence with prominent femoral condyles and a hollow sulcus.

Conclusion: Isolated congenital bilateral patellar absence I asymptomatic serving military soldier has not been described in the English literature before and is exceedingly rare.

Keywords: Congenital absence of patella, bilateral, knee pain, conservative treatment, case report.

Introduction

Congenital absence of the patella refers to a condition where an individual is born without the patella [1]. It may be bilateral or unilateral [2,3]. It is an extremely rare condition and when present mostly occurs as part of syndromes, such as the Nail-patella syndrome [4,5], small patella syndrome, trisomy 8 mosaicism, and Meier–Gorlin syndrome [6,7].

Limited data are available on congenital absence of the patella [8-10], Individual case reports highlight the rarity of the condition [11-13]. No data on incidence and prevalence is available due to the small number of cases except where the patella was absent as part of a syndrome [14-16].

Case Report

We are presenting 35-years-old free medically, active soldier referred to the orthopedic clinic from family medicine after noticing abnormal incidental findings on X-rays (Fig. 1-4).

On inquiring him, he doesn't recall any problem during his childhood and performing his military duties. On clinical examination of the patient, he had characteristic features of

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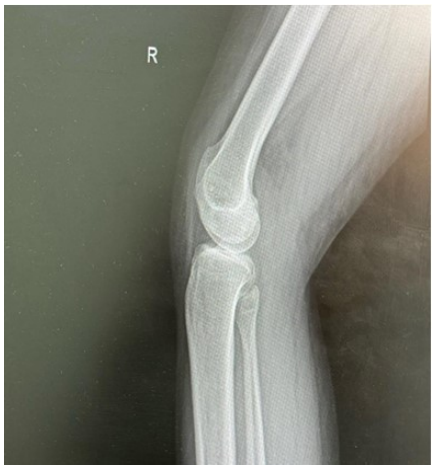

Figure 1: Lateral view right knee shows absent.

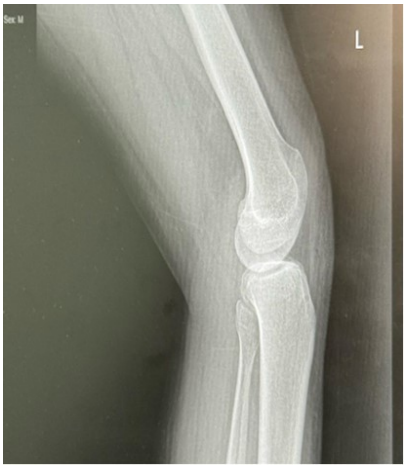

Figure 2: Lateral view left knee shows absent patella.

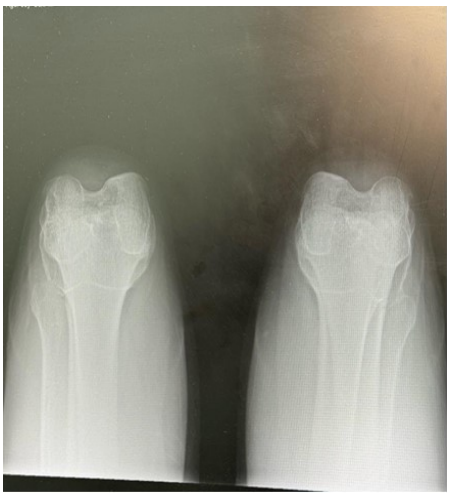

Figure 3: Skyline view of both knees shows absent patella.

patellar absence with prominent femoral condyles and hollow sulcus as per computed tomography (CT) both knees (Fig. 5,6).

He has good quadriceps and hamstring power 5/5. No other abnormalities were detected in his upper and lower limbs. Potential biomechanical adaptations that help to maintain normal gait and joint kinematics in this patient with congenital absence of the patella, specifically mechanisms that prevent knee hyperextension. This may include strengthening or altered recruitment of surrounding musculature (e.g., hamstrings, hip flexors, gastrocnemius), and modified joint alignment or ligament tensioning within normal compare to other studies. Both static postures and dynamic loading scenarios, for example, walking and stair climbing, have been stable movements, which are normally enhance quadriceps efficiency by increasing the moment arm and increased hamstring stress due to compensatory function in absence of the patella)Fig. 5).

His blood parameters of liver function test, renal function test, and bone profile and labs are all normal (Table 1). Patient's hip joints demonstrated a normal range of movement and his ankle joints were also normal. The rest of her musculoskeletal exam was also normal. His cardiovascular, neurological, and abdominal examinations were all normal (Fig. 5). CT chest, abdomen, and pelvis showed no osseous or visceral abnormal. (Fig. 7 & 8).

Discussion

Congenital absence of bilateral patella occurring in isolation is rare and is usually associated with syndromes. It is even rarer to occur in an asymptomatic active soldier. The most common syndrome associated is Nail Patella syndrome. Other rare syndrome includes Meier–Gorlin syndrome, RAPADILINO syndrome, and Genitopatellar syndrome.

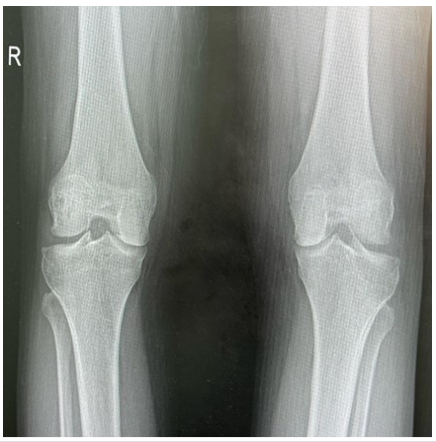

Figure 4: Standing weight bearing radiographs of his bilateral knee showing congenital absence of bilateral patella with preserved knee joint.

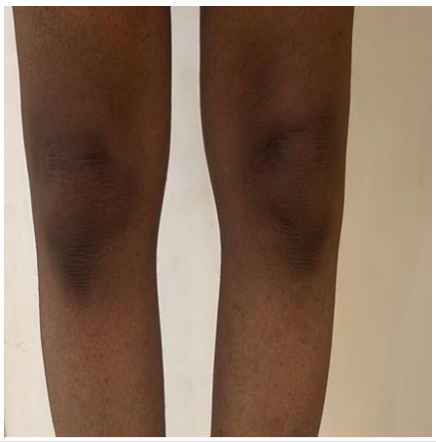

Figure 5: Standing posture both knees' range of motion is from 0 to 120 actively with no extension lag.

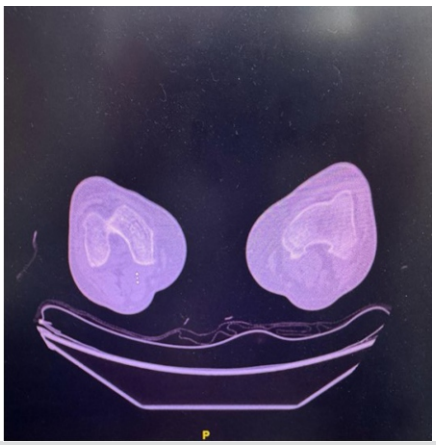

Figure 6: Computed tomography bilateral knee showed no limb length discrepancy. Axial cut both knee patella not visualized.

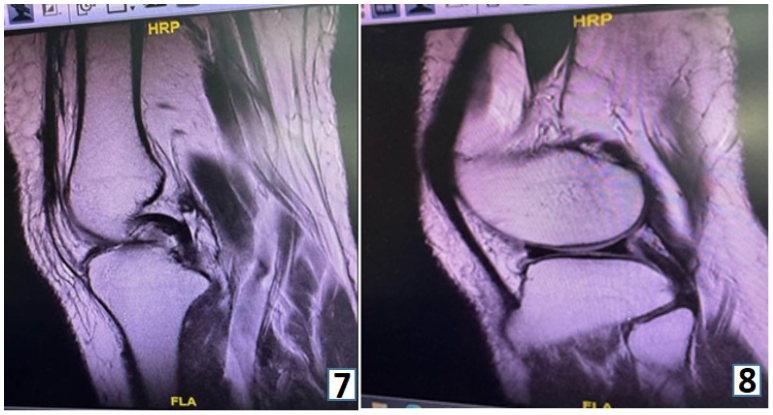

Figure 7 & 8: MRI both knees showing no intra articular pathology (Fig 7 and 8). Degenerative changes of meniscus. On both knee, MRI revealed absence of patella bones and showing mild to moderate degeneration posterior horn of the lateral meniscus, and medial meniscus changes, which may be related to repetitive abnormal knee loading with intact ligaments ACL PCL MCL LCL.

Conclusion

Isolated congenital bilateral patellar absence I asymptomatic serving military soldier has not been described in the English literature before and is exceedingly rare.

Clinical Message

Congenital absence of bilateral patella occurring in isolation is rare and is usually associated with syndromes. It is even rarer to occur in an asymptomatic active soldier.

Description	Result	Reference range
WBC	5.3	4–10
RBC	4.74	3.8–5.8
Hemoglobin	14.3	12–16
Renal profile sodium-serum	141 mmoL/L	136–144
Renal profile potassium-serum	4.8	3.6–5.1
Renal profile creatine-serum	61	39–91
BUN-serum (Urea nitrogen)	3.3	2.9–7.1
Hemoglobin A1C	4.98	4–6
Calcium serum-plasma bone profile	2.47	2.2–2.65
Albumin	44 g/d	35–48
Magnesium-plasma bone profile	0.78 mmoL/L	0.68–1.07
Phosphorus-plasma bone profile	1.01 mmoL/L	0.78–1.53
Alkaline phosphate-plasma bone profile	57 U/L	32–91
Vitamin D (25-hydroxy)	60.50 mg/mL	
Total bilirubin	6.65	
Alanine aminotransferase	8 U/L	
AST	20 U/L	
GGT	10 U/L	
WBC: White blood cells, RBC: Red blood cells, BUN: Blood urea nitrogen, AST: Aspartate aminotransferase, GGT: Gamma glutamyl transferase		

Table 1: Routine laboratory investigations.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil **Source of support:** None

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Conflict of Interest: Nil
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Consent: The authors confirm that informed consent was obtained from the patient for publication of this case report

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