

First Report of Congenital Type II Klippel-Feil Syndrome Identified in an Infant from Early Medieval Wales

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SITE CONTEXT

Early medieval cemetery excavated beneath St Patrick’s Chapel, Pembrokeshire, Wales

Radiocarbon dates: 8th – 12th century AD

Mixed cemetery population

Burial rites (e.g. stone-lined graves, E-W orientation) in keeping with a Christian tradition



INDIVIDUAL SK1038a – PATHOLOGY PROFILE

- Age estimation:
 - Femur: 37.8 ± 2.08 weeks^[1]
 - Tibia: 38.4 ± 2.12 weeks^[1]
 - Dental: around birth^[2]
- Bilateral congenital fusion of first and second ribs (A)
- Congenital fusion of C3-C4 (B)
- Presence of bilateral cervical ribs (C)
- Bilateral transverse fissures of basioccipital (D)
- Diffuse cranial dysplasia
- No changes to the post-cranial skeleton

DISCUSSION

SK1038a may represent a case of Klippel-Feil Syndrome (KFS)

KFS is a congenital condition involving any type of segmental failure of the cervical vertebrae^[3]

KFS has dominant and non-dominant inheritance patterns with three expressions (Type I, II, III) each following different genetic pathways^[3]

Bilateral fusion of C3-C4 lamina is consistent with Type II KFS^[4]

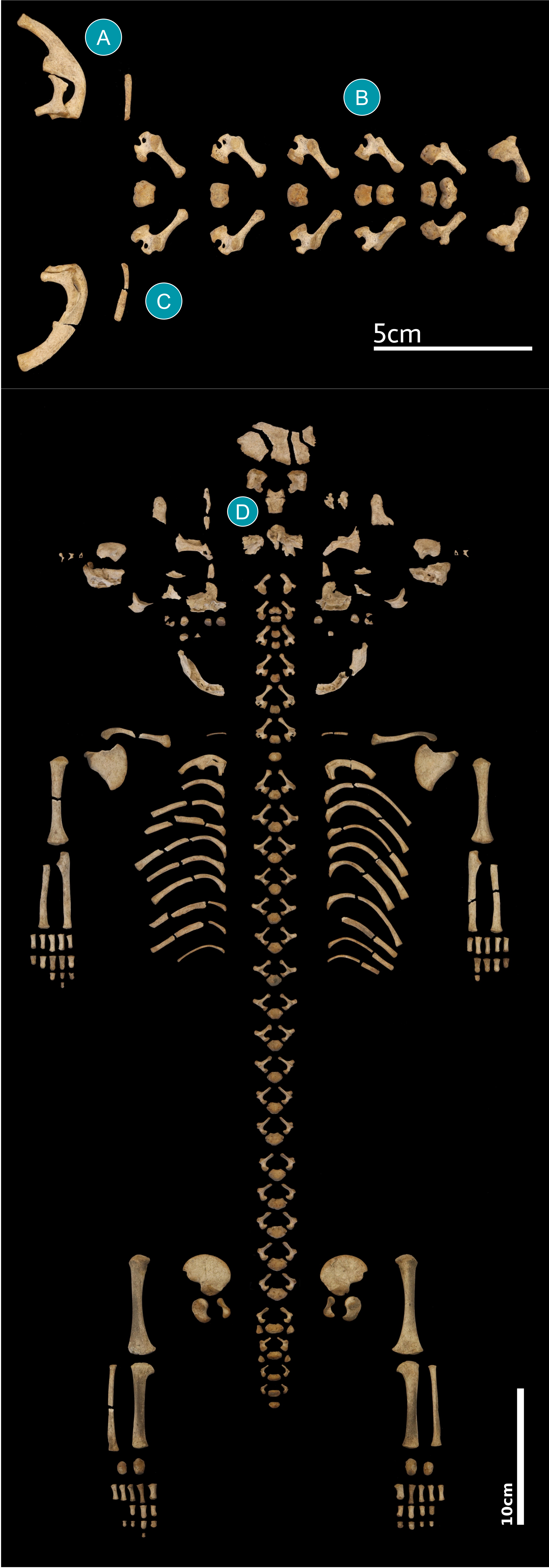
Cervical ribs commonly occur in KFS (and other segmentation anomalies) and can cause neurological symptoms^[5;6;7]

KFS is not fatal but is often associated with other complications (e.g. cleft lip/palate, cardiovascular disease, hearing reduction/loss, nerve impairment, limited neck mobility)^[7]

Other archaeological cases of KFS identified in Belize, Hungary, Portugal, Slovakia, and Spain^[e.g. 8;9;10]

Cases from Medieval Britain are reported from Raunds Furnells, Northamptonshire and the Augustinian Friary, Hull, Humberside; all are adults^[7]

Future work aims to establish a unified pathology profile that explains all present features



References
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Acknowledgements
Thanks to: Ken Murphy and Archaeoleg Dyfed; Cadw; Arfordir Penfro; Nineveh Charitable Trust; Cambrian Archaeological Association; all the volunteers who helped during the excavation and those who have supported other aspects of the project to date.
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