50 Years Ago in CORR

Slipping of the Upper Femoral Epiphysis

Beckett Howorth MD CORR 1957;10:148–173

This month's symposium reports various aspects of the diagnosis and treatment of femoroacetabular impingement, a condition recognized for well over a century but only recently emphasized, perhaps owing to the recognition of its occurrence in subtle and common forms. It was perhaps first recognized in 1898 a few years after the introduction of the roentgenogram in association with slipped capital femoral epiphysis [11]. According to Howorth, in the article highlighted here, Poland, in 1898, reported a case in which without reducing the displacement, "the projecting anterosuperior margin of the neck was trimmed away" [5]. He also noted that Whitman in 1909 [17] and Vulpius and Stöffel in 1913 [15] reported similar cases.

Howorth suggested the earliest reference to slipped capital femoral epiphysis came from Ambroise Paré, whom he quotes, "The epiphysis of the head of the femur sometimes separates in such a way that the surgeon is misled, thinking there is a dislocation instead of a separation of the epiphysis" [5]. Howorth reviewed the work of many other authors who described slipped capital femoral epiphysis in the preradiographic days, although one wonders how these were identified unless they were observed at surgery (not all that common even in the late 1800s after the advent of general

anesthesia) or autopsy. (Interested readers will find a large number of these early citations to slipped capital femoral epiphysis in Howorth's article.) Howorth stated Poland, in 1898, found 31 cases in the literature and added his own [11].

In the first half of the 20th century the therapeutic emphasis in slipped capital femoral epiphysis was on the acute or chronic slip in adolescents, not the residuals in adults. Campbell, in the first edition of his book (1939) does not mention the treatment of adults with residuals [1]. However, the concept of impingement as a cause of hip pain in adults was certainly known in the 1930s. Smith-Petersen, in the Classic we reproduce in this issue, well described the entity [13].

Howorth only briefly notes a "residual stage," following the acute slipped capital femoral epiphysis, in which "...some degree of osteoarthritis...may supervene." In fact, he ventures, "Slipped epiphysis is probably the most common cause of osteoarthritis of the hip, often in the past called by the nonspecific term *malum coxae senilis*" (a term used in Smith-Petersen's Classic in this issue). Nearly twenty years later, Stulberg et al. suggested unrecognized childhood diseases (primarily more or less subtle forms of slipped capital femoral epiphysis, developmental dysplasia, and Legg-Calvé-Perthes disease) were likely a

cause of many cases of presumably idiopathic osteoarthritis [14]. Ganz and colleagues from Bern believed these conditions and others such as acetabular retroversion and femoral neck fractures caused impingement of the anterosuperior femoral neck against the labrum and acetabulum, resulting in labral and articular cartilage damage [2, 6, 7, 9, 12]. This theme has been recently amplified by Ganz and coworkers, suggesting osteoarthritis occurs because of subtle forms of impingement not always readily detected on traditional forms of imaging [4, 16]. Many of the deformities of the femoral neck are consistent with mild, unrecognized slipped capital femoral epiphysis. The concepts about femoroacetabular impingement continue to be refined [3, 10], but the recent work of Loder et al. [8] suggests Howorth may have been correct in surmising that subtle forms of slipped capital femoral epiphysis could be a common cause of osteoarthritis.

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