50 Years Ago in CORR

Multiple Myeloma

Warran A. Ross, MD CORR 1961;20:203–207

Multiple myeloma was recognized during the second half of the 19th century. In 1848, in an article entitled, “On a New Substance Occurring in the Urine of a Patient with Mollities Ossium” (“Mollities Ossium” is what we now call osteomalacia) [1], Henry Bence Jones wrote, “On the 1st of November 1845 I received from Dr. Watson the following note, with a test tube containing a thick, yellow, semisolid substance: ‘The tube contains urine of very high specific gravity; when boiled it becomes highly opaque; on the addition of nitric acid it effervesces, assumes a reddish hue, becomes quite clear, but, as it cools, assumes the consistence and appearance which you see: heat reliquifies it. What is it?’” He then wrote, “January 2nd.-The patient died. The following day I saw that the bony structure of the ribs was cut with the greatest ease, and that the bodies of the vertebrae were capable of being sliced off with the knife. For an account of the structure of the bone, see a paper by Mr. Dalrymple in the third number of the Dublin Journal, August 1846.”

Bence Jones went to great efforts to characterize the protein as “an oxide of albumen, and from the ultimate analysis, it is the hydrated deutoxide of albumen” and related it to the softness of the bones. According to Doubek et al. [3], Dalrymple’s case was the first described. However, Bradshaw

and Warrington [2], in 1899, stated, “This condition was first described as a distinct disease in 1873 by von Rustizky of Kiew, under the name of multiple myeloma, a designation under which several cases of multiple bone tumours have been recorded since.”

Thus, by the late 1800s multiple myeloma was well recognized as a condition arising from the medullary spaces and causing gross softening. Its fuller histological and molecular characterization occurred during the 20th century [7].

Myeloma is a hemtologic malignancy typically manifesting itself in bone, and is the most common primary bone malignancy [4]. It occurs primarily in an older population, with presentation at a median of 65 years. The prognosis is generally poor. In a recent article, Quach et al. [5] suggested that within the past 10 years median survival has increased from approximately 3 years some decades ago to 5 to 8 years, at least in younger patients.

Ross [6], in 1961, reported a series of 85 patients, with back pain as the predominant presenting symptom (Table 1). Only nine of his patients were surviving at the time of writing, and they had survived an average of 48 months. Twenty-five of the 85 patients presented with pathologic fracture, four of whom had long bone fractures treated with internal fixation.

Table 1. Symptoms at initial examination (85 cases of multiple myeloma) (Reprinted with permission and © Lippincott Williams & Wilkins, from Ross WA. Multiple myeloma. *Clin Orthop.* 1961;20:203–207.)

Symptom	Number of patients
Vertebral pain	51
Loss of weight	45
Gastrointestinal disorders	29
Chills and fever	13
Respiratory disturbances	9
Dermatologic complaints	4

Today the primary role of the orthopaedic surgeon is two-fold: (1) diagnosing the disease when patients present with back pain or musculoskeletal pain elsewhere and (2) treatment of the lesions, either prophylactically when appropriate or after pathologic fracture. Given the relative frequency of multiple myeloma, orthopaedists should have a high index of suspicion when elderly patients present with insidious onset of musculoskeletal pain or with pathologic fractures.

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References

1. Bence Jones H. On a new substance occurring in the urine of a patient with

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- mollities ossium. *Phil Trans Roy Soc Lond.* 1848;138:55–62.
2. Bradshaw TR, Warrington WB. The morbid anatomy and pathology of Dr. Bradshaw's case of myelopathic albumosuria. *Med Chir Trans.* 1899; 82:251–268.
3. Doubek M, Kalous O, Oborilova A. [Who was Mr. McBean and what resulted from his death?] [In Czech]. *Vnitr Lek.* 2000;46:732–735.
4. Lewis VO. Hematologic Malignancies. In: Damron TA, ed. *Oncology and Basic Science*. Philadelphia, PA: Lippincott Williams & Wilkins; 2008: 244–250.
5. Quach H, Prince HM, Spencer A. Managing multiple myeloma in the elderly: are we making progress? *Expert Rev Hematol*;4:301–315.
6. Ross WA. Multiple myeloma. *Clin Orthop.* 1961;20:203–207.
7. Unni KK. *Dahlin's Bone Tumors: General Aspects and Data on 11,087 Cases*. Philadelphia, PA: Lippincott-Raven; 1996.

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