Epidemiology of Bone Lesions

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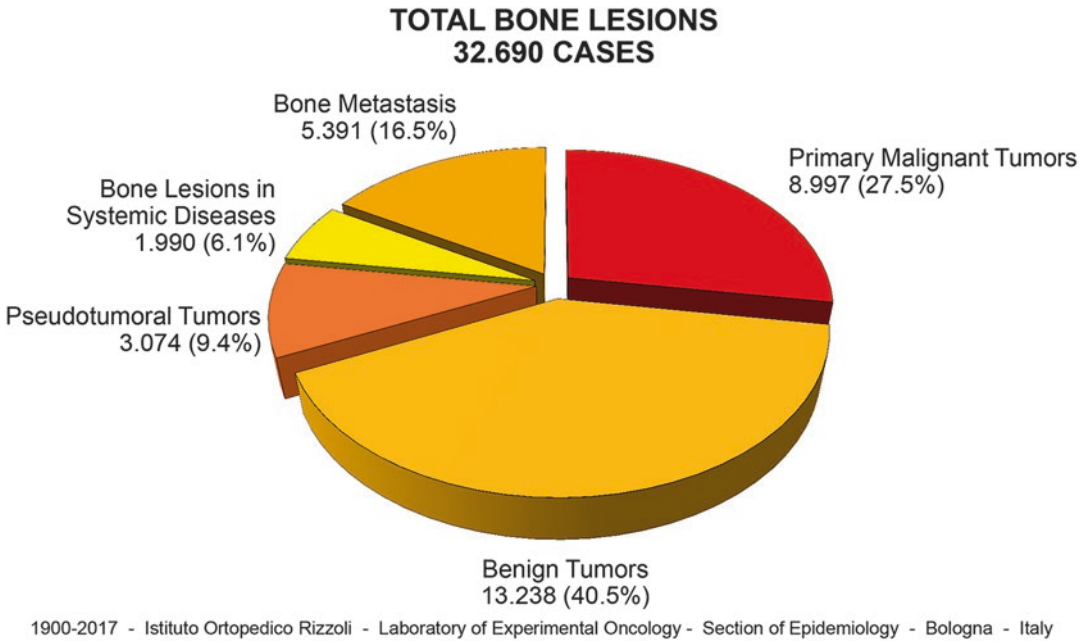
There are no data regarding epidemiology of pseudotumoral and benign bone lesions. Most are incidental findings during examinations for other conditions. As for soft tissue lesions, it is generally accepted that benign conditions are 100 times more frequent than malignant primary bone tumors.

Figures from the Rizzoli archive are not representative of the true incidence, as they represent cases treated in a specialized center and therefore biased for more severe or complicated cases. More reliable are data regarding age, sex, and sites of presentation.



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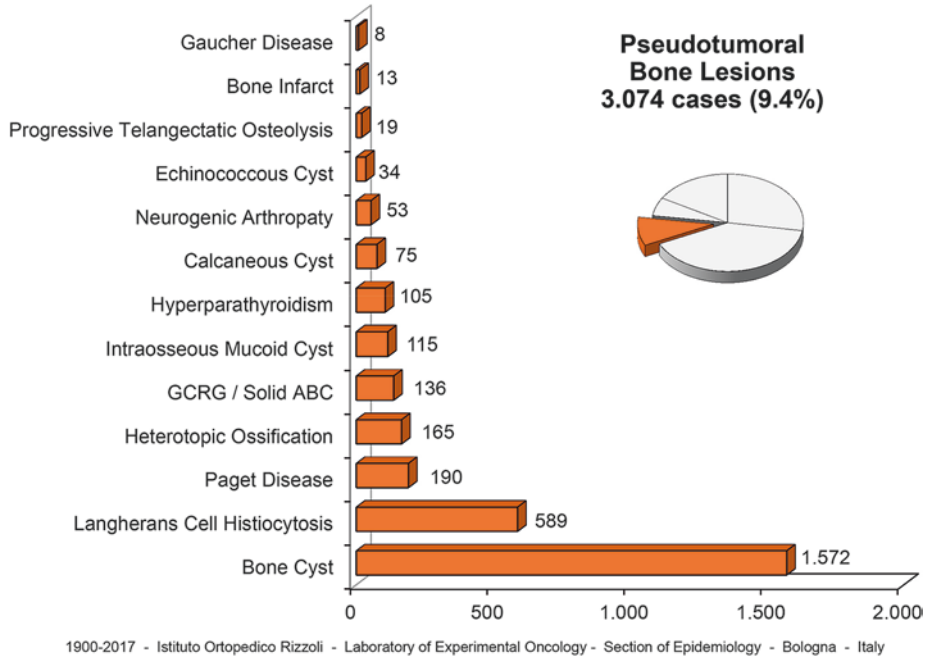
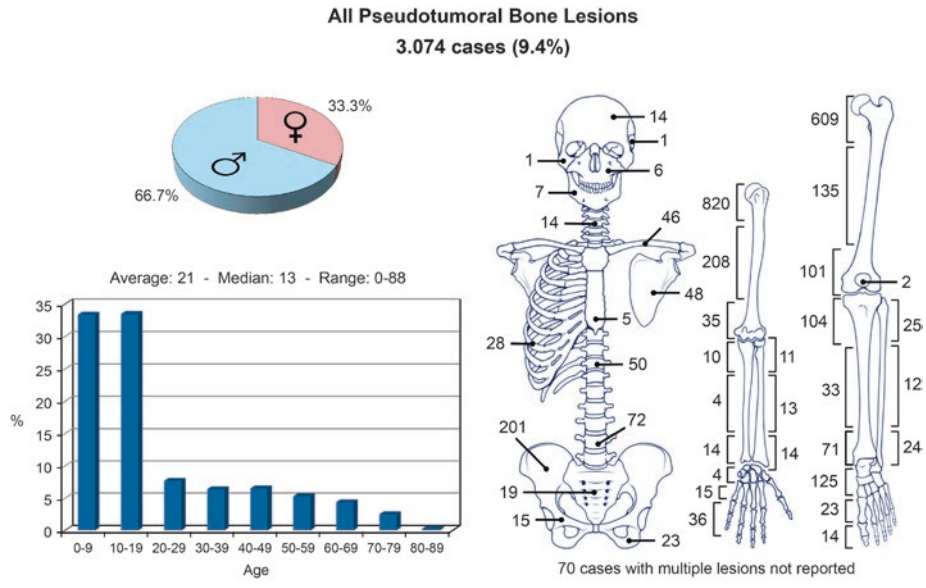
1.1 Pseudotumoral Lesions

The male/female ratio is 2:1. Typically, they affect children and teenagers with a median age of 13 years. In fact, the most represented entities are simple bone cyst and Langherans cell histiocytosis which are typical of young age. Aneurysmal bone cyst, once included in pseudotumoral lesion, is now considered a benign entity, due to the detection of a specific translocation.

These two entities together represent more than 70% of all pseudotumoral lesions. Preferred sites are metaphysis of long bones, especially proximally.

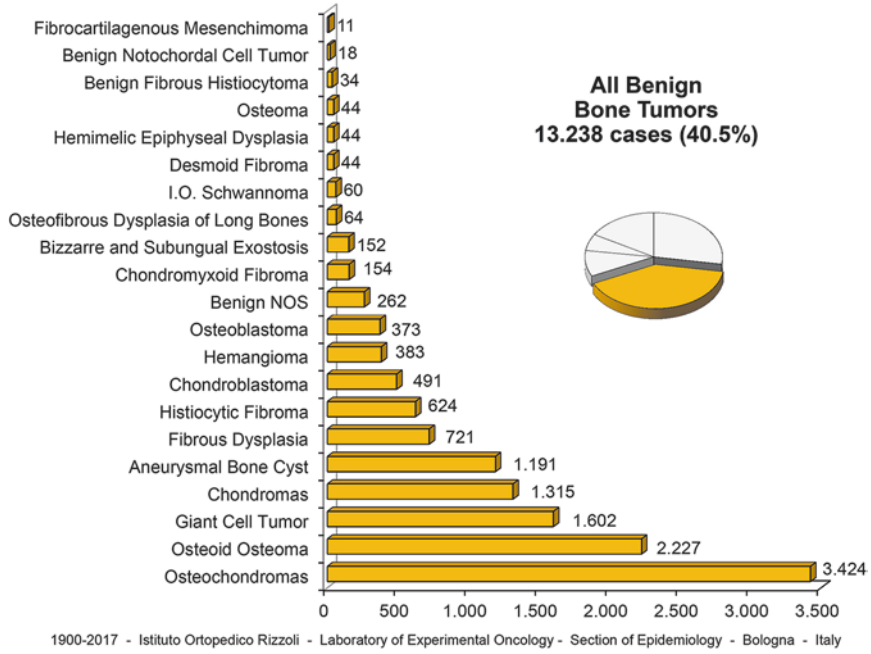


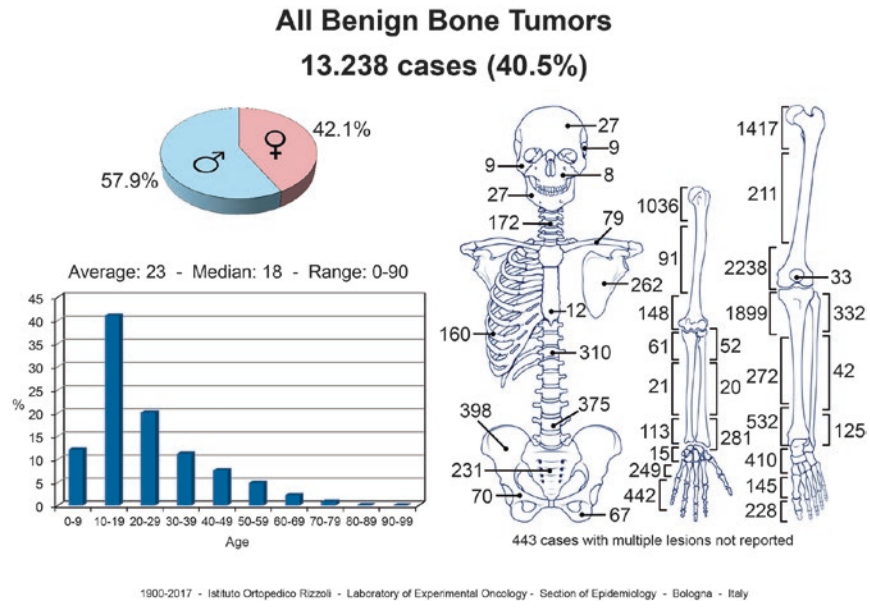


1.2 Benign Tumors

The male/female ratio is 1.5:1. Age comprises the first four decades of life, with a median age of 18 years. They are very rare in the elderly.

The most represented are benign chondroblastic lesions (osteochondromas and chondromas) and osteoid osteoma. Aneurysmal bone cyst is now considered a benign entity, due to the detection of a specific translocation. Preferred sites are in bone around the knee, but practically all bones may be affected with localizations in flat bones that are not rare.





1.3 Primary Malignant Tumors

More reliable epidemiologic data are available for primary malignant bone tumors or with a better definition of bone sarcomas. Incidence is usually evaluated including soft tissue sarcomas. Global incidence reported is around five new cases/100,000 inhabitants/year. This incidence is similar in different countries with about 3,000 new cases per year in Great Britain and Italy (with 60 million inhabitants) and about 12,000 new cases in the USA (with about 300 million inhabitants).

This incidence of bone sarcomas is about 0.2% of all neoplasms.

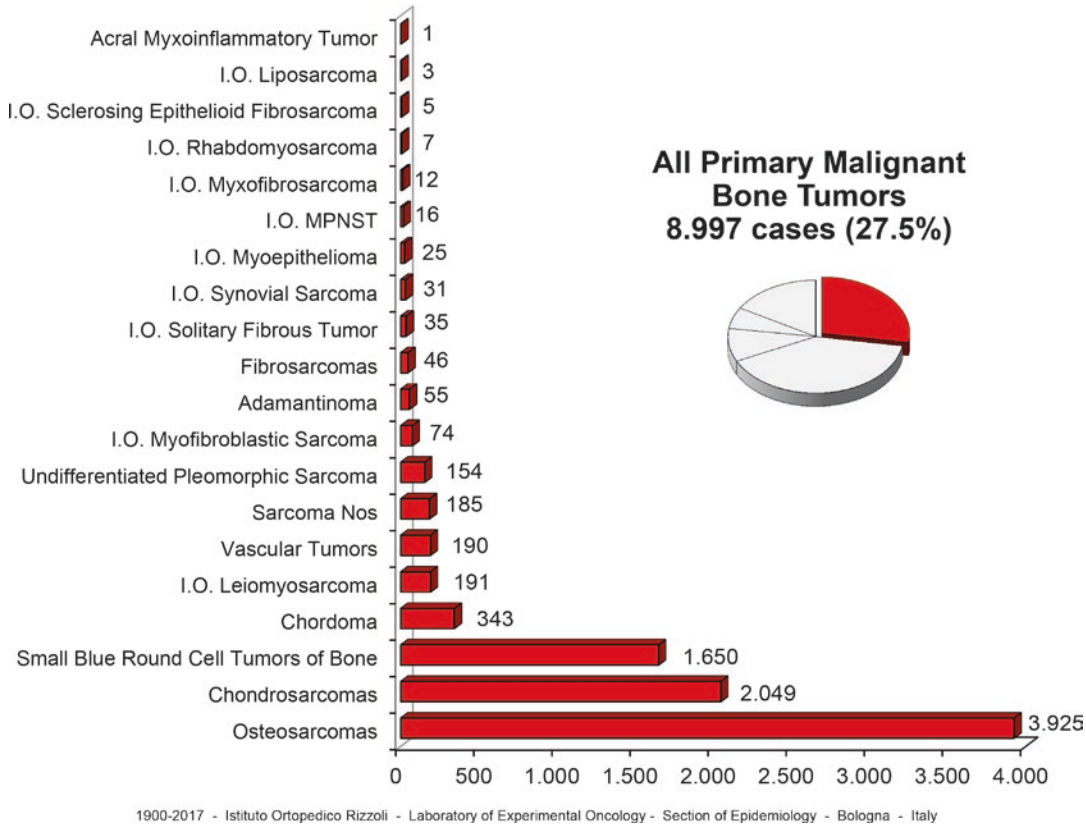
Specifically regarding bone sarcomas, their incidence is considered 1/5–1/6 of all sarcomas, with an incidence of 0.8–1 new case/100,000 inhabitants/year.

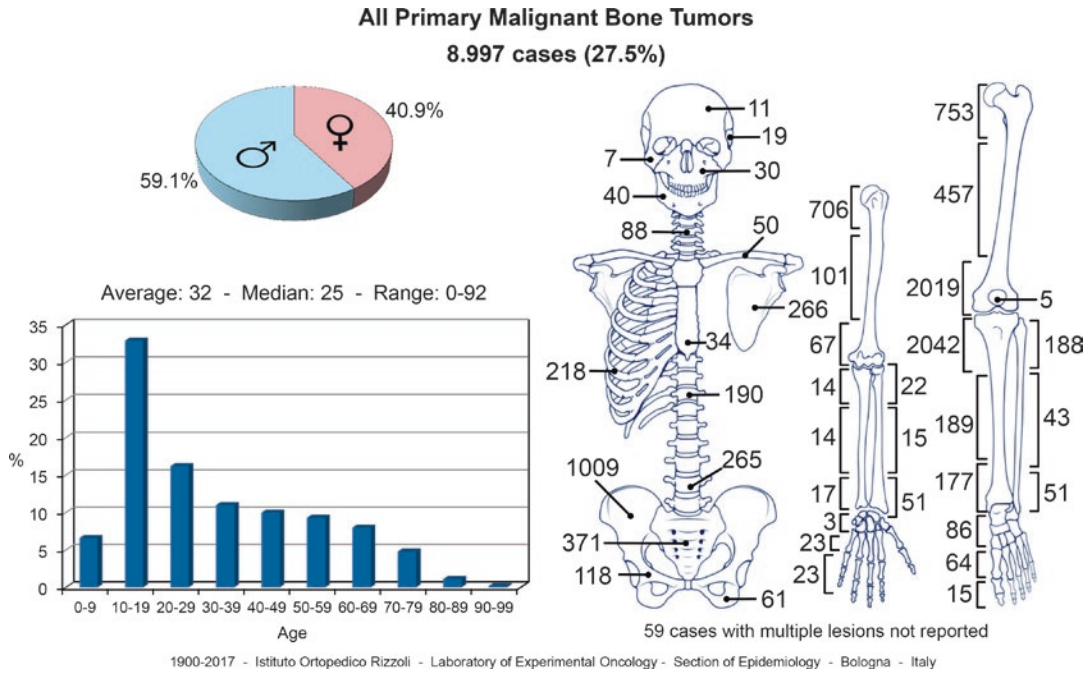
The Rizzoli archive figures are more reliable in comparison to nonmalignant conditions. The only bias is related to the lack of registration of those localizations generally not treated at an orthopedic hospital as the trunk and skull.

The male/female ratio is again 1.5:1, as for the benign lesions. Median age is 25 years, with a peak in the second and third decades of life. Incidence is also evident and constant for all the adult age.

Osteosarcomas are the most frequent with an incidence of about 0.2 new cases/100,000 inhabitants/year.

A similar incidence is also reported for chondrosarcomas, followed by Ewing sarcoma with an incidence considered one-half in comparison to osteosarcomas. All other entities are very rare. Affected sites are the same as those of benign tumors.



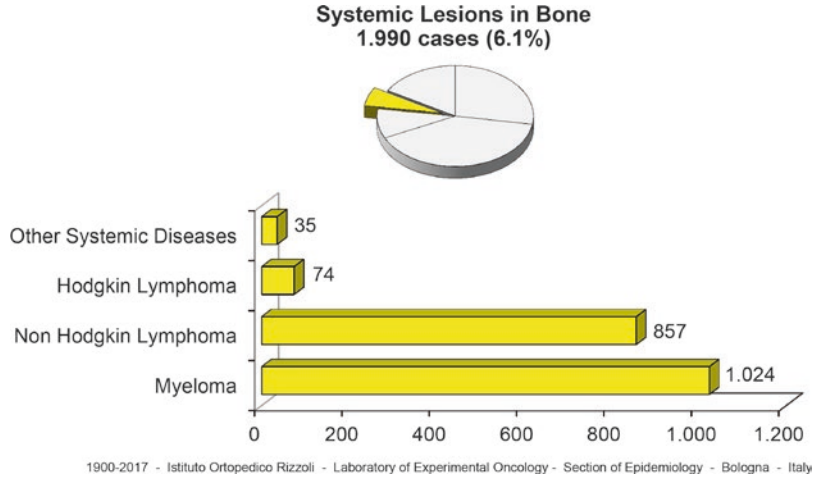


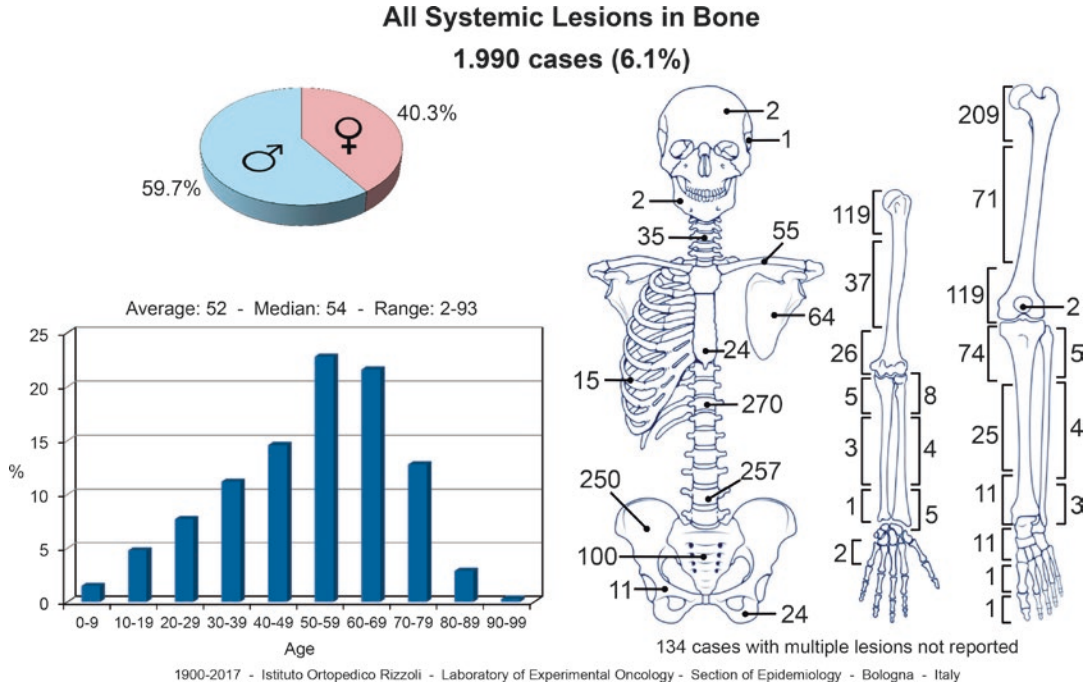
1.4 Systemic Lesions and Metastasis

The figures reported in this book, and therefore the incidence, reflect only those lesions requiring orthopedic attention and treatment and therefore are non-representative of the true data.

Systemic lesions comprise mainly myeloma and non-Hodghin lymphomas, rarely Hodgkin disease or leukemic disorders.

The male/female ratio is again 1.5:1. Median age is 54 years, and these lesions are very rare before the adult age.





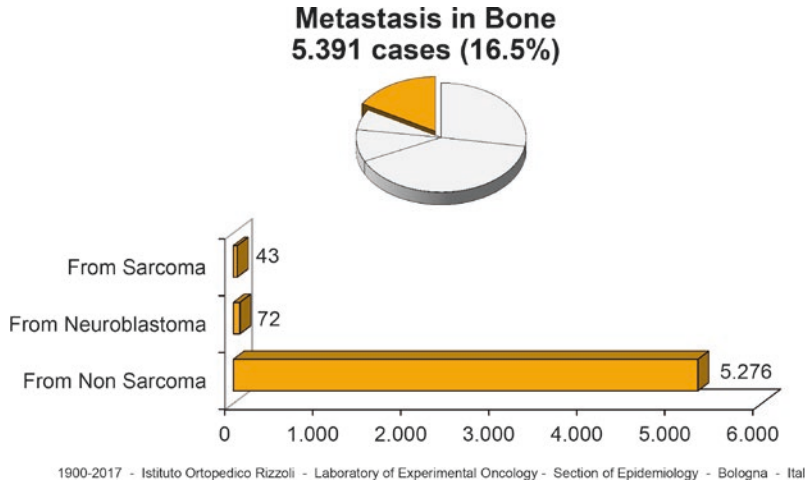
Metastasis is by far more frequent than primary bone sarcomas, but considering that they do not always deserve orthopedic treatment, they are therefore underestimated in this book.

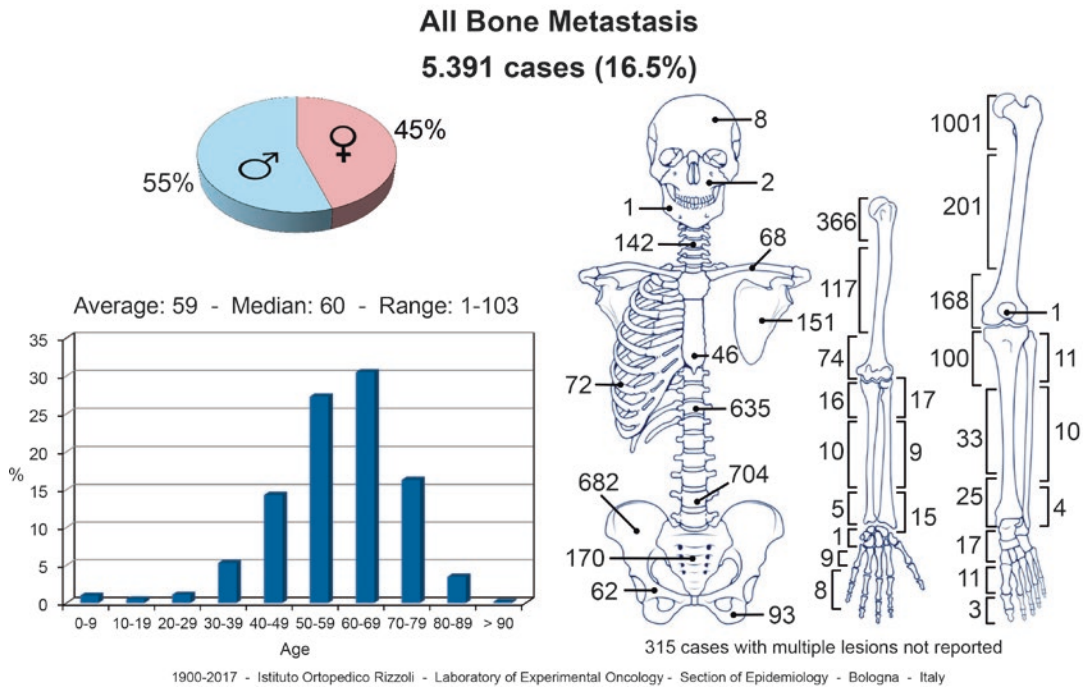
The prevalence is slightly higher in the male gender, with a median very advanced age (60 years).

The site of origin of the tumors are represented by breast, kidney, and lung in more than 60% of the all cases, followed by gastroenteric, prostate, and thyroid in another 20% (see table in dedicated chapter).

Rarely the bone metastases may originate from sarcomas. In our experience, in our series this is due in 60% of the cases from leiomyosarcoma of the uterus.

Bone metastasis from neuroblastoma, typical of infancy with a median age of 6 years, must be considered in the differential diagnosis with small blue round cell tumors of bone.





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