

ARACHNOMELIA IN ITALIAN BROWN CALVES

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Arachnomelia

- **Definition:** Arachnomelia is a congenital and lethal abnormality of the skeletal system giving the animal a spidery look.
- **Distinctive clinical findings:** skeletal malformations of the skull (brachygnathia inferior and concave rounding of the dorsal profile of the maxilla) and the legs (dolichostenomelia with high fragility of long bones and hyperextension of the posterior fetlocks). Pathogenesis: defect in the metabolism of the connective tissue (?) Etiology: genetic (likely simple autosomal recessive inheritability). Spread in the Brown breed by the U.S. sire Norvic Lilasons Beautician.

Main morphological aspects

Facial deformities: concave rounding of the dorsal profile of the maxilla and short lower jaw (brachygnathia). Multiple fractures with sinking of the skullcap in the cranium of calf A.

Leg malformations: abnormal length and thinning of all legs (dolichostenomelia).

Severe angular deformities in the distal part of the hind legs (hyperextension of the fetlocks with the extremity of the toe forward and parallel to the trunk of the body).

Severe atrophy of leg muscle.

Calf B







The report deals with four Italian Brown calves which were brought dead to the Department of Veterinary Clinical Science of Padua because of macroscopic skeletal malformations of the skull and the legs.

Calf A, female (14.11.2002): stillborn

Calf B, female (13.10.2002): put down at the 3rd day of life

- Calf C, female (12.03.2003): stillborn
- **Calf D**, male (25.08.2003): stillborn

Calf C

All calves traced back to the same sire (Tommy). Their ancestors, although not always the same, were already known as

possible carriers of the defect (A).





Multiple cardiac anomalies (only in calf C): complete transposition of the arterial trunks, bilateral concentric ventricular hypertrophy.







Remarks

In addition to these reports, many Italian Brown cattle breeders have reported the occurrence of other cases of Arachnomelia; all the indicated calves were









offspring of Tommy or Amaranto. As both these two bulls have been widely used for artificial insemination in Italy, we expect many cases of Arachnomelia in the future.

At this moment there is neither a chromosomal nor biochemical test to detect other carriers. Only the report of malformed calves can enable a retrospective identification of carrier animals.



