

A case of iatrogenic myositis in piglet

Miositis iatrogénica en cerditos

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RESUMEN

Se observó un caso de miositis infecciosa debido a iatrogenia en lechones destetados. Seis lechones de cuatro camadas mostraron cojera uni y bilateral de los miembros traseros, inhabilidad para moverse, posición de perro sentado e hiperflexión de los miembros posteriores. Las lesiones encontradas a la necropsia fueron: osteocondrosis, osteomielitis, nódulos linfáticos inguinales aumentados 30 veces su tamaño normal y abscesos entre las falanges. Otros hallazgos fueron presencia de manchas de hierro en músculos semitendinoso y semimembranoso, sangre acuosa, palidez de la canal y esplenomegalia. Se concluyó que los desórdenes esqueléticos y la cojera junto con la bubonalgia observados en estos lechones se debieron a inyecciones de hierro realizadas en forma séptica e inadecuada por operarios de la granja.

Palabras claves: cerdos, miositis, iatrogenia, lechón pata larga.

Key words: pigs, myositis, iatrogenia, lameness, hyperflexion of anterior digits.

INTRODUCTION

Locomotor disorders in weaning pigs are common, basically due to flooring materials in farrowing pens or crates that may be abrasive (Gardner and Hird, 1994). This condition provides a route for entry of pathogenic organisms into the foot. The wide variation of lameness makes its differential diagnosis, especially in individual animals, very difficult. Although lameness tends to be a sporadic problem affecting few animals, one may also see lameness outbreaks involving many animals. This tend to be the result of nutritional or infectious problems and usually affects the joints;

although rare, lameness outbreaks can involve muscles rather than joints (Segalés *et al.*, 1995). Leg injuries can also be caused by bad management techniques, yatrogenia when handling pigs with septic surgical equipment or needles. For instance, infectious myositis was first described in Mexico three decades ago (Ramírez and Aluja, 1973) in 3 weeks to 4 months old pigs. The low economic importance of the condition and consequently, the low sporadic report of cases, are probably the main causes that this condition has not been studied in an exhaustive way.

MATERIAL AND METHODS

Animals in this case study belonged to a farrow to finish pig farm in the State of Mexico.

Six 2-months old weaned piglets from three litters were humanely sacrificed after a clinical evaluation. They showed pain, severe lameness, dog sitting position, difficulties to reach the feeder, and a severe hyperflexion of the posterior digits with a long unilateral or bilateral feet looking (figure 1); creating irreversible muscular atrophy.

Blood samples were taken before euthanasia. Necropsies were performed using Ramírez *et al.* (2002) *post mortem* examination protocol. Organ samples were obtained for bacteriology.

RESULTS AND DISCUSSION

Blood counts results showed abnormalities in red blood cells with poikilocytosis in 2/6 animals; all the animals showed leukocytosis (24.350 to 56.300/mm³) which indicated a clear septicemic problem. Besides, lymphocytosis (33%-88%) was found in 2 pigs, and a tendency

in two more, probably as a recent response to swine fever live virus vaccination.

Regarding bacteriology isolations, joint abscesses and inguinal and popliteal ganglio showed *Erysipelothrix rhusiopathiae*; joint abscesses, *Proteus vulgaris*; samples from semitendinous and semimembranous muscles, *E. rhusiopathiae* and *S. aureus*; *E. coli*, also found in popliteal lymph nodes (table 1).

Necropsy findings were liquid blood and paleness. Inguinal ganglion increased 30 times the normal size in all the pigs (Fig. 2). Other lesions found were congestion, oedema and atrophy of popliteal lymph nodes and muscular oedema (tarsal and metatarsal). Iron spots were found on the right hind limb (semitendinous and semimembranous muscles); pus in the spinal cord, semitendinous and semimembranous muscles, and lungs. Splenomegaly, osteochondrosis, osteomyelitis in tarsal bones; fibrin in abdominal cavity; cortex *renis* infarcts



FIGURE 1. Affected piglets with flaccid paralysis from the right hind limb; they had permanent metacarpian flexion which produced leg dragging and abrasion of the metacarpian joint, with flegmon, necrosis and humid gangrene formation.

Lechones afectados con parálisis flácida del miembro posterior derecho que mantuvieron el miembro en flexión metacarpiana permanente, lo que obligó al arrastre y a la abrasión de las articulaciones mencionadas con formación de flegmones, necrosis y gangrena húmeda.

TABLE 1. Bacteria isolated from organs at 24 and at 48 hours.**Aislamiento bacteriano de los órganos a 24 y 48 horas.**

Bacteria isolations	24 hours	Number of samples	48 hours	Number of samples
<i>Streptococcus spp.</i>	muscle	1	-	-
<i>Staphylococcus aureus</i>	muscle	1	-	-
<i>Erysipelothrix rhusiopathiae</i>	joint abscesses, muscle, popliteal and inguinal lymph node	1	lung, bone abscess and inguinal lymph node	1
<i>Proteus vulgaris</i>	joint abscess	1	joint abscess	2
<i>E. coli</i>	-	1	popliteal lymph node	1



FIGURE 2. Edematous inguinal lymph node from the right hind leg, increased 30 times in size (bubo). Ganglio inguinal edematoso del miembro posterior derecho, aumentado 30 veces su tamaño (bubón).

with capsular adherence and joint cartilage fragility were also seen.

Our findings agree with previous work from Ramírez-Necoechea and Aluja (1973), who found that piglets affected had a slow growing rate, and one foot looking larger than the other one. This was due to the fact that piglets had flaccid paralysis from one of the hind limbs and they had permanent metacarpian flexion

producing leg dragging and abrasion of the metacarpian joint (figure 1). Although the case report was different from Segalés *et al.* (1995), similar findings were seen in knuckling of the metatarsal-phalangeal joint, plantigradism and inability to move, and dog-sitting posture.

Animals involved in the lameness condition were 2 per litter, this finding coincided with Ramírez-Necoechea and Aluja (1973), who

showed that 50 piglets from 30 farrowings, 2 per litter, were involved in a similar case study.

Lesions found in three of the animals proved castration was done without hygienic measures; the inguinal region had not healed one month after the surgery was performed. Also, the presence of buboalgia with all inguinal ganglion increased in size, allow us think that yatrogenia was the main cause of illness (Ramírez-Necoechea and Aluja, 1973).

Even though *Erisipelothrix rhusiopathiae* was isolated we do not think this was the cause of the lesions observed, since pigs had maternal immunity and according to Wood (1999), swine less than 3 months or more than 3 years of age are generally least predispose to this pathogen.

We conclude that repeated injections and poor injection techniques such as the use of too long needles, injecting in the wrong place, and asepsis during the castration, rather than the compound itself, were the cause of the problem. Improvements on injection and castration techniques were recommended for the stockmen at the farm, especially when injecting iron.

SUMMARY

A case of infectious myositis due to yatrogenia was observed in weaning piglets. Six piglets from four litters were affected showing unilateral and bilateral hind limb, knuckling of the metatarsal-phalangeal joint, inability to move, dog sitting position, and hyperflexion of the posterior digits.

Necropsy findings showed: osteochondrosis, osteomyelitis, bubos increased more than 30 times the normal size and, abscesses between phalanges. Other conditions seen were: iron spots in semitendinous and semimembranous muscles, aqueous blood, paleness and splenomegaly. It was concluded that the skeletal disorders and the lameness with buboalgia seen in these pigs were caused by inadequate iron injections performed by unskilled workers at the farm.

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