Polyarthritis caused by \textit{Erysipelothrix rhusiopathiae} in three Austrian sheep flocks- diagnosis, treatment and management measures

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Abstract

Polyarthritis caused by \textit{Erysipelothrix rhusiopathiae} is a well-known disease in pigs, and ovine erysipelas infection also commonly affects two-to-six month-old lambs. This report describes case histories of three sheep flocks where lambs exhibited swollen joints and lameness. Special emphasis was given to clinical and diagnostic imaging findings, synovia sampling and the treatment regime. Lambs with only mild lameness, liquid serofibrinous joint effusion and lambs showing no bone involvement, as revealed by ultrasonography or radiography, were treated with systemically administered antibiotics selected from results of antimicrobial susceptibility testing of \textit{E. rhusiopathiae} isolated from synovial samples, and non-steroidal anti-inflammatory drugs. Lambs with severe lameness and severely swollen joints were euthanized, and routine necropsy was undertaken with a focus on the joints. Further, a herd-specific autogenous vaccine was produced by a specialized laboratory. In conclusion, \textit{E. rhusiopathiae} infection should be considered as a differential diagnosis in herds associated with lameness and polyarthritis in lambs aged between two up to 17 months.

Key words: Arthritis, ovine erysipelas, lameness, swollen joints, ultrasound, x-ray, vaccine
Polyarthritis caused by Erysipelothrix rhusiopathiae in three Austrian sheep flocks—diagnosis, treatment and management measures

J. Schoiswohl et al.

Introduction

Erysipelothrix rhusiopathiae, an ubiquitous gram-positive bacterium, is as well commensal as pathogen in a wide range of vertebrates, including humans and birds. This bacterium can survive for at least up to five weeks in the environment, and pigs are the most important reservoir of infection. The disease caused by these bacteria, erysipelas, has an economic importance, especially in swine, but also in domestic poultry, and cattle and sheep may also be involved. There are also reports of natural infections in horses, dogs, ducks, mice, and wildlife species. Erysipelothrix rhusiopathiae infections in swine, called swine erysipelas, are very common and can be controlled by vaccination.

Polyarthritis caused by E. rhusiopathiae in sheep, in particular in two to six month old lambs, is a relatively common infection being characterized by high morbidity (7–28%) and low mortality (1,7%), and chronic manifestation lead to severe changes in affected joints. Ersdal et al. described acute and chronic E. rhusiopathiae infections in lambs during an outbreak in a Norwegian sheep flock. 20% of lambs developed clinical signs in the acute phase and 1,7% died. At necropsy E. rhusiopathiae was cultured from samples taken from organs and from carpal and tarsal joints, the latter showing a fibrinous arthritis. 33% of diseased lambs developed a chronic polyarthritis. At necropsy, all animals showed lesions of the articular cartilage in mayor limb joints, and E. rhusiopathiae could be cultured. By pulsed-field gel electrophoresis typing isolates indicated that acute and chronic disease was caused by the same strain. In addition, all chronically diseased lambs had a glomerulonephritis. Sodoma et al. reported that all strains of E. rhusiopathiae detected in swine, lambs and turkeys were sensible for penicillin. In contrast to swine in many countries there is no vaccine registered for sheep. Pfister et al. described a herd problem of lameness and polyarthritis caused by E. rhusiopathiae affecting approximately 20% of young lambs in a sheep flock in Switzerland, housed together with fattening pigs in one farm. When such an anamnestic information is given that sheep and pigs are kept together in a farm where lambs develop lameness and polyarthritis, an infection with E. rhusiopathiae must always be considered.

The aim of this case report is to describe the diagnostic work-up procedure in cases of polyarthritis in lambs caused by E. rhusiopathiae in sheep-flocks and the applied treatment and management measures.

Case histories and results

Between December 2017 and December 2018 eight lambs (male and female, with an age between one and

Figure 1a, 1b: Lateral view of the severely distended dorsal and plantarolateral tarsocrural joint pouches (a), and the severely distended carpal joint pouches (b) of one of the lambs of farm 2.
17 months) from three different farms were referred to the University Clinic for Ruminants due to lameness and swollen joints. The lambs originated from farms with approximately 100 to 150 sheep, and the flocks were recognized as free of CAE and Maedi-Visna. By anamnestic case history interview the farmers reported that all animals suffering from lameness were lambs of twin or multiple births. Beside of these referred animals, 18 other lambs at these farms showed signs of lameness and two had been already euthanized due to swollen joints, recumbency and poor condition. The affected lambs were lame, showed a stiff gait and swollen joints, however no signs of pneumonia or lameness were reported in adult sheep. Before this outbreak of polyarthritis in these three flocks, never any lameness was observed in lambs and adult sheep. Furthermore, it was revealed that in farm 1 and 2 sheep and pigs were kept together, and in farm 3 poultry was kept on the same farm.

Clinical findings
Clinical and orthopedic examination revealed that the lambs showed cachexia (Body condition score (BCS) 1 and 2) and the lung auscultation showed bilaterally slightly harsh lung sounds in one of the female lambs. All lambs showed a moderate lameness on the fore- and hind limbs, moderately to severely swollen carpal, tarsal and stifle joints, and obvious moderate flexion of the affected carpal joints (Fig. 1a, b; Tab. 1). All other clinical parameters including body temperature (38,5–39,5 °C) based on full clinical examination were normal.

Diagnostic imaging findings
Ultrasoundographic examination of the swollen joints using a 7,5 MHz linear probe (Mindray DP-30Vet, Mindray Bio-Medical Electronics Co. Ltd, Shenzhen, China) revealed a mild to moderate anechoic to hypoechoic effusion with and without flow-phenomena, the latter indicating a fibrinous effusion. In addition, in four lambs the articular surfaces of carpal, tarsal and stifle joints showed raw contours with loss of the articular cartilage (Fig. 2a,b; Tab. 2). Radiological examination on un-sedated living animals using latero-medial and cranio-caudal projections confirmed the diagnosis of polyarthritis, in cases of chronic joint infection in four lambs the contours of the articular bones (Fig. 3a–d) showed irregular and bone-dense osteophytes (Tab. 2).

Sampling of synovial fluid, laboratory and necropsy findings
Blood analysis revealed that the blood count was inconspicuous and calcium, phosphorus, magnesium, iron and selenium were within physiological ranges (calcium 2,20–3,00 mmol/L; phosphorus 1,30–2,20 mmol/L; magnesium 0,78–1,07 mmol/L; iron 73–179 µg/dl; selenium 21–123 µg/L). Synovial samples were taken aseptically by arthrocentesis using hypodermic 1,6 mm wide needles from joints showing the clinically and ultrasonographically most evident effusion (Tab. 1). Synovial samples were transferred into sterile tubes and submitted to the diagnostic laboratory for microbiological examination. Due to unfavourable prognosis two lambs were euthanized after the diagnostic procedure. Standard necropsies were undertaken with special emphasis on the joints and samples were collected aseptically for microbiological
Polyarthritis caused by Erysipelothrix rhusiopathiae in three Austrian sheep flocks—diagnosis, treatment and management measures
J. Schoiswohl et al.

Microbiological examination
Samples were inoculated onto Columbia agar with 5% sheep blood (BBL™, BD Diagnostics, Austria) incubated at 37°C under microaerobic conditions (5% CO2 atmosphere) and daily checked for growth. Samples were additionally examined for mycoplasmas using a protocol described elsewhere.20 Moderate to abundant growth of E. rhusiopathiae identified by matrix-assisted laser desorption ionization—time of flight mass spectrometry (MALDI-TOF MS) (Bruker Daltonik, Bremen, Germany) was observed in all samples after two days of incubation. Susceptibility testing and test interpretation was performed according to the Clinical and Laboratory Standards Institute using the agar disk diffusion method in the same manner as for streptococci employing blood-supplemented Mueller-Hinton agar (BBL™, BD Diagnostics, Schwechat, Austria) as well as broth microdilution susceptibility testing.1 Mycoplasmas were not detected in any samples examined.

Treatment regime
Lambs that showed only a mild lameness, a liquid serofibrinous joint effusion and lambs showing no bone involvement (assessed by ultrasonography or by radiography) were treated for five days with Ampicillin (10 mg Ampicillin/kg BW IM., Ampicillin «Vana» 200 mg/ml – Injektionssuspension für Tiere®, Vana GmbH, Austria) and sulfadiazine in oral form (500 mg sulfadiazine in connection with 24 mg folic acid/ml orally for five days). Severe joint lesions were treated with Ampicillin (10 mg Ampicillin/kg BW IM.) for five days and sulfadiazine in oral form for five days. Lambs were treated with the antimicrobial agent intramuscularly three times a day. Lambs that showed an additional bone involvement (assessed by ultrasonography or by radiography) were treated with Ampicillin (10 mg Ampicillin/kg BW IM.) for seven days. Severe cases also received sulfadiazine in oral form for seven days.

Table 1: Summarized clinical findings of the orthopedic examination of the affected lambs, and findings of the macroscopic evaluation of the synovial samples yielded by arthrocentesis of the joints showing the most severe effusion;

<table>
<thead>
<tr>
<th>Farm</th>
<th>Animal number</th>
<th>Involved joints</th>
<th>Degree of swelling</th>
<th>Conformation of involved joints</th>
<th>Palpatory findings on affected joints</th>
<th>Punctured joints</th>
<th>Macroscopic appearance of synovial sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>left &amp; right carpal</td>
<td>moderate</td>
<td>slight to moderate flexion</td>
<td>not painful</td>
<td></td>
<td>severely cloudy, yellow &amp; liquid (serofibrinous)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>left &amp; right carpal</td>
<td>moderate</td>
<td>slight to moderate flexion</td>
<td>not painful</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>left &amp; right carpal</td>
<td>moderate</td>
<td>not palpable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>left &amp; right carpal</td>
<td>severe</td>
<td>not painful</td>
<td>left carpal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>left &amp; right tarsocrural</td>
<td>moderate</td>
<td>painful</td>
<td>right tarsocrural</td>
<td></td>
<td>severely cloudy, yellow and liquid (serofibrinous)</td>
</tr>
<tr>
<td></td>
<td>8*</td>
<td>right tarsocrural</td>
<td>slight</td>
<td>painful</td>
<td>right tarsocrural</td>
<td></td>
<td>severely cloudy, yellow &amp; liquid (serofibrinous)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>left &amp; right tarsocrural</td>
<td>moderate</td>
<td>painful</td>
<td>left tarsocrural</td>
<td></td>
<td>fibrinous</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>left &amp; right tarsocrural</td>
<td>slight</td>
<td>not painful</td>
<td>left tarsocrural</td>
<td></td>
<td>fibrinous</td>
</tr>
</tbody>
</table>

*Lamb 8 was presented at the clinic 12 month later.
Polyarthritis caused by Erysipelothrix rhusiopathiae in three Austrian sheep flocks: diagnosis, treatment and management measures

J. Schoiswohl et al.

Vienna, Austria) and for 3 days with non-steroidal anti-inflammatory drugs (3 mg Ketoprofen/kg BW IM; Rifen®, Richter Pharma AG, Wels, Austria). The farmers and local vets were advised to treat animals with mild lameness and mild joint effusion with the same regime, and to euthanize lambs with severe lameness and severely swollen joints, and furthermore to vaccinate all sheep twice (at the beginning of the program and six months later) against E. rhusiopathiae with a herd-specific autogenous vaccine which was produced by a specialized laboratory (BS Immun GmbH, Vienna, Austria) from isolated E. rhusiopathiae. In addition, farmers were advised to remove pigs (farm 1 and farm 2) and poultry (farm 3) from the farm due to risk of infection, because pigs and poultry were not tested.

Two year outcome
As suggested, in farm 1 pigs were removed from the farm, and all mild infected animals were treated with the mentioned medication, and severely infected animals were euthanized. Furthermore, the local veterinarian on farm 1 started the same vaccination program after the definite diagnosis was taken by bacteriological culture. Since this time farm 1 had no problems with lameness again. In farm 2, the recommendations being the same as given for farm 1 were not implemented at all, and approximately 20 other lambs developed polyarthritis during the subsequent months. These lambs were treated by the local veterinarian repeatedly over several months with different antibiotics (i.e. Marbafloxacin, Tetracycline) but development of new infections could not be stopped. Approximately 12 months after the first referral, another one-month-old male Lacaune lamb (Tab. 2 and 3; lamb 8) was presented at the Clinic for Ruminants showing lameness and swollen joints. Blood analysis revealed that the blood count was inconspicuous, and calcium, phosphorus, iron and magnesium were within the physiological range. Samples

<table>
<thead>
<tr>
<th>Farm</th>
<th>Animal number</th>
<th>Investigated joints</th>
<th>Radiographic findings</th>
<th>Ultrasonographic findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>left &amp; right carpal</td>
<td>–</td>
<td>mild anechoic effusion with flow-phenomena, fibrin mass in MIC-joint and raw bone contours at the dorsal carpus</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>left &amp; right carpal</td>
<td>Moderately distended joint spaces in all three carpal joints, irregular formation osteophyte formation at the articular bone contours</td>
<td>mild anechoic effusion with flow-phenomena, fibrin mass in MIC-joint and raw bone contours at the dorsal carpus</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>left carpal</td>
<td>Severely distended joint spaces of the ABC and MIC joints, irregular formation of osteophyte formation at the articular bone contours</td>
<td>mild anechoic content in carpal joint left, hypoechoic effusion (fibrin) in joint capsule (MIC), raw articular surfaces in carpus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>right stifte</td>
<td>–</td>
<td>mild anechoic effusion in the right lateral and medial femorotibial joint with hypoechoic fibrin masses adhering the joint capsule</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>left &amp; right carpal</td>
<td>–</td>
<td>mild anechoic effusion without flow-phenomena in the ABC- and MIC-joint, articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>right tarsocrural</td>
<td>–</td>
<td>severe and mainly hypoechoic effusion with flow phenomena, articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>left &amp; right carpal</td>
<td>–</td>
<td>moderate to severe anechoic to hypoechoic effusion of the precarpal bursa (precarpal hygroma), and moderate and anechoic effusion in the ABC and MIC joints, articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>right tarsocrural</td>
<td>–</td>
<td>moderate anechoic to hypoechoic effusion without flow-phenomena, raw articular contours dorsally</td>
</tr>
<tr>
<td></td>
<td>8*</td>
<td>left &amp; right carpal</td>
<td>–</td>
<td>mild anechoic to hypoechoic effusion with flow-phenomena, and articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>right tarsocrural</td>
<td>–</td>
<td>moderate mainly hypoechoic effusion with adhering fibrin masses at the capsule in the dorsal pouch, hypoechoic effusion without flow phenomena (fibrin masses) in the latero-plantar pouch, articular surfaces normal</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>left carpal</td>
<td>–</td>
<td>mild anechoic effusion in the ABC joint, articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>left &amp; right tarsocrural</td>
<td>–</td>
<td>moderate hypoechoic effusion without flow-phenomena, articular surfaces normal</td>
</tr>
<tr>
<td></td>
<td>8*</td>
<td>left &amp; right carpal</td>
<td>–</td>
<td>mild anechoic effusion in ABC, MIC and CMC joint without flow-phenomena, articular surfaces normal</td>
</tr>
</tbody>
</table>

*Lamb 8 was presented at the clinic 12 month later.*
Polyarthritis caused by Erysipelothrix rhusiopathiae in three Austrian sheep flocks—diagnosis, treatment and management measures
J. Schoiswohl et al.

were aseptically collected from affected joints by arthrocentesis using a 1.6 mm puncture needle and submitted for microbiological examination, again resulting in the detection of E. rhusiopathiae. The lambs were euthanized due to poor general condition and afterwards the owner decided to start a vaccination program. Since starting the vaccination program approximately two months after diagnosis, no new cases of lameness were assessed and the herd infection could be resolved in farm 2. In farm 3 all mild infected animals were treated using the above mentioned medication (Ampicillin (10 mg Ampicillin/kg BW IM., Ampicillin «Vana» 200 mg/ml – Injektionssuspension für Tiere®, Vana GmbH, Vienna, Austria) and with non-steroidal anti-inflammatory drugs (3 mg Ketoprofen/kg BW IM.; Rifen®, Richter Pharma AG, Wels, Austria), and severely infected animals having a poor prognosis were euthanized. The farmer did not vaccinate the animals, but he removed poultry from the farm and since this time no problems with lameness were encountered anymore on farm 3.

Discussion

This report describes the occurrence of polyarthritis in lambs from three Austrian sheep flocks caused by an E. rhusiopathiae infection, in particular their clinical, diagnostic imaging and laboratory work-up and their treatment regime. Polyarthritis caused by E. rhusiopathiae infection is a well-known disease in pigs.6 Ovine erysipelas infection most commonly affects two to six months-old lambs1, 6, 10, 14 which was in agreement with our findings, however even sheep until an age of 17 months were involved. Polyarthritis in lambs is mainly caused by pathogens which reach joints by bacteremia. From a differential point of view in such cases of polyarthritis the infection with ubiquitous pyogenic organisms such as Streptococcus dysgalactiae, Staphylococcus aureus and Trueperella pyogenes may enter into the bloodstream via the umbilicus or wounds,8, 15 and can be caused by Mycoplasma spp. and/or Chlamydia spp.14, 19 However, also older sheep can be infected by E. rhusiopathiae showing pathologies of other organs without involvement of joints.2, 6, 23 The acute disease is described as having a morbidity ranging from 7% to 28% and low mortality (1.7%), and more than one third of infected lambs develop chronic stages of joint infection associated commonly with poor body condition,6, 10, 14 which could be observed even in the
Polyarthritis caused by Erysipelothrix rhusiopathiae in three Austrian sheep flocks - diagnosis, treatment and management measures

J. Schoiswohl et al.

Table 3: Results of antimicrobial susceptibility testing of E. rhusiopathiae isolated from synovial samples

<table>
<thead>
<tr>
<th>Farm</th>
<th>Antimicrobial susceptibility testing results</th>
<th>resistant to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>susceptible to</td>
<td>Doxycycline, Tetracycline, Erythromycin, Clindamycin, Sulfamethoxazole-Trimethoprim</td>
</tr>
<tr>
<td>1</td>
<td>Penicillin, Ampicillin, Amoxicillin-Clavulanic acid, Ceftriaxone, Cefovecin, Cefquinome, Enrofloxacin, Marbofloxacin, Florfenicol</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Penicillin, Ampicillin, Amoxicillin-Clavulanic acid, Ceftriaxone, Cefovecin, Cefquinome, Enrofloxacin, Marbofloxacin,</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>Penicillin, Ampicillin, Amoxicillin-Clavulanic acid, Ceftriaxone, Cefovecin, Cefquinome, Enrofloxacin, Marbofloxacin, Florfenicol</td>
<td>Doxycycline, Tetracycline, Erythromycin, Clindamycin, Sulfamethoxazole-Trimethoprim</td>
</tr>
</tbody>
</table>

three presented sheep flocks. In the described cases lambs from twin birth and multiple births were affected. It cannot be assumed with certainty, but there is a high confidence that inadequate colostrum supply was responsible for the clinical manifestation of infection due to insufficient immune responses. Antibodies to E. rhusiopathiae are excreted per colostrum intake. For optimal protection, a newborn lamb should have a colostrum intake for the first time within the first two to four hours of life and have consumed 15–20% of its body weight of colostrum by 24 hours after birth. An IgG concentration of 15–40 g/L in the serum is optimal (24 hours after parturition). In all 3 flocks, lambs from twin birth and multiple births were affected and therefore they may have had a worse colostrum supply and so these lambs were more susceptible to infection. In lambs raised for meat production, management procedures such as shearing increase the risk for joint infection. In addition to bacterial infections mineral deficiency could lead to lameness, but in all three flocks minerals were within the physiological range (calcium 2,20–3,00 mmol/L; phosphorus 1,30–2,20 mmol/L; magnesium 0,78–1,07 mmol/L; iron 73–179 µg/dl; selenium 21–123 µg/L).
Polyarthritis caused by Erysipelothrix rhusio­pathiae in three Austrian sheep flocks: diagnosis, treatment and management measures

J. Schoiswohl et al.

Infected lambs should be treated as early as possible. Penicillin (30 000 IU/kg BW SID) is recommended as therapy for at least five days additionally a non-steroidal anti-inflammatory drug (Flunixin, Ketoprofen) should be administrated for three days. However, recurrence is not uncommon. Chronically infected lambs should be euthanized. Metaphylactic treatment with penicillin after birth is unsatisfactory and rarely prevents polyarthritis.14 Erysipelothrix rhusio­pathiae is generally considered resistant to sulfonamides, while susceptibility is variable to streptomycin and tetracyclines,12, 19 which is consistent with our findings from the sensitivity tests. The antimicrobial drug of choice for treatment of Erysipelothrix infections is penicillin6, 23 or ampicillin,14 the latter was administered in the described cases. Chronic ovine erysipelas has been described as a disease that is restricted to joints with subchondral bone involvement.6, 23

By anamnestic case history interview the farmer from flock 1 reported that the problems started when there were introduced two pigs for the own use into the farm. There had been no problems with lameness before. So in this case E. rhusio­pathiae could be probably introduced by the pigs since these pigs were not vaccinated against E. rhusio­pathiae. Vaccination against E. rhusio­pathiae in pigs is one of the oldest vaccinations. In countries with large sheep farms, sheep are also successfully vaccinated against E. rhusio­pathiae.23 The first immunization of adult sheep and rams takes place every three to six weeks. Revaccinations are necessary every six months, and it is recommended that ewes should be vaccinated four weeks before birth, lambs can be vaccinated first time with the age of eight weeks.16 Swiss vaccines against E. rhusio­pathiae are only approved for use in pigs and contain inactivated Serovar 2 and formed antibodies show a cross-reaction against Serovar 1,17 Antibodies against E. rhusio­pathiae are excreted via the colostrum. The duration of immunity of E. rhusio­pathiae vaccines varies between six and 12 months. The efficacy is variable and depends on the type of strains used and use of the appropriate vaccine in different species of animals.18, 21 In Australia, between 1995 and 1998,24 swine herds experienced vaccine failure.5 The farmer of flock 1 started vaccination of sheep and since this time he had no problems with lameness anymore. There is no corresponding vaccine registered for sheep in Austria and so a herd-specific autogenous vaccine was produced from isolated E. rhusio­pathiae by a specialized laboratory. In flock 2 there were also pigs at the same farm. Pigs and sheep were kept in the same stable, just separated in two different compartments. In this case E. rhusio­pathiae could also be introduced by pigs. Flock 3 was the neighbour of farm two. There were no pigs at this farm, however poultry and so E. rhusio­pathiae could be introduced probably by poultry. Farm 3 did not practice a vaccination program. In this farm all affected lambs were treated with antibiotics systemically, severely affected lambs were euthanized and poultry was eliminated from the farm, after the diagnosis of E. rhusio­pathiae-associated polyarthritis had been made.

In conclusion, even associated with a low occurrence in Middle European countries,14, 19 an E. rhusio­pathiae infection should be considered as a differential diagnosis in cases of herd problems associated with lameness and polyarthritis in lambs aged between two to 17 months. In lambs with chronic infection, a thickened joint cap-
sule, a mainly fibrinous joint effusion, and extended erosions/ulcerations of the articular cartilage are characteristic ultrasonographic and/or necropsy findings. However, for stating a definite diagnosis of ovine erysipelas infection sterile sampling of synovial effusion or synovial membrane and a bacteriological culture are crucial. It must be remembered that *E. rhusiopathiae* infection is a zoonosis which for veterinarians and farmers is occupationally related, mainly occurring as a result of contact with infected animals, their products or wastes, or contaminated soil. The use of gloves and single-use overall during examination of animals suggestive with an erysipelas infection is highly recommended.

**Declaration of Competing Interest**

The authors declare that they have no competing interests.

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**Polyarthritis caused by *Erysipelothrix rhusiopathiae* in three Austrian sheep flocks- diagnosis, treatment and management measures**

J. Schoiswohl et al.

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La polyarthrite causée par *Erysipelothrix rhusiopathiae* est une maladie bien connue chez le porc. Chez les ovins, l’infection touche le plus souvent les agneaux âgés de deux à six mois. Ce rapport de cas décrit trois troupeaux de moutons où des agneaux présentaient des articulations enflées et une boiterie. Un accent particulier a été mis sur la clinique, les résultats de l’imagerie diagnostique, les prélèvements de synovial et le mode de traitement. Les agneaux présentant uniquement une légère boiterie, des épanchements articulaires séro-fibrineux et ceux ne présentant pas d’atteinte osseuse, révélée par échographie ou radiographie, ont été traités avec des antibiotiques administrés par voie systémique, sélectionnés à partir des résultats de la sensibilité d’*E. rhusiopathiae* isolé sur les échantillons synoviaux, ainsi qu’avec des anti-inflammatoires non stéroïdiens. Les agneaux présentant une boiterie sévère et des articulations gravement enflées ont été euthanasiés et une autopsie de routine a été réalisée avec un accent particulier mis sur les articulations. De plus, un vaccin autogène spécifique au troupeau a été produit par un laboratoire.

En conclusion, l’infection à *E. rhusiopathiae* doit être considérée comme un diagnostic différentiel dans les troupeaux où l’on constate des boiteries et des polyarthrites chez les agneaux âgés de 2 à 17 mois.

**Mots clés:** Arthrite, érysipèle ovine, boiterie, gonflement des articulations, échographie, vaccin, radiographie

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La poliartrite causata da *Erysipelothrix rhusiopathiae* in tre greggi di pecore austriache – diagnosi, trattamento e misure per la gestione


**Parole chiave:** artrite, erisipela ovina, zoppia, rigonfiamento delle articolazioni, ecografia, vaccino, raggi
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