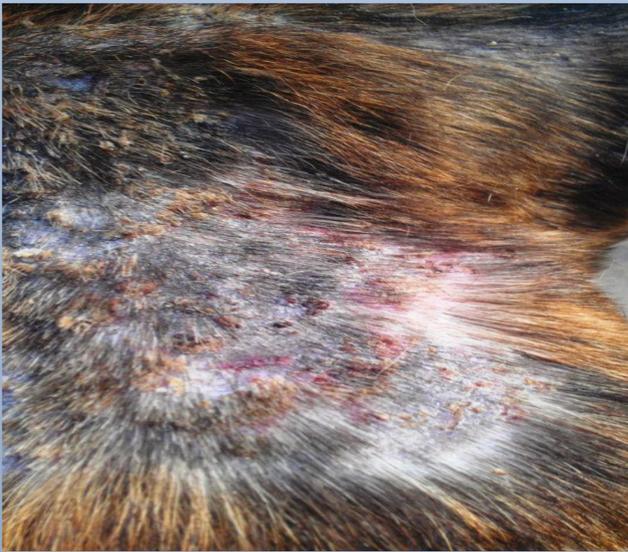


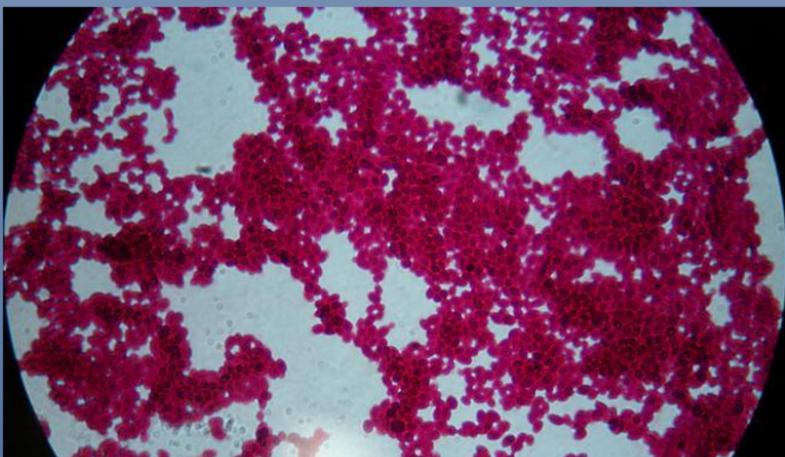
Introduction

MRSP (meticillin-resistant *Staphylococcus pseudintermedius*) could be confused with MRSA (meticillin resistant *Staphylococcus aureus*) and though there are many similarities between the two when compared in a human and animal perspective, MRSP has emerged as a bacteria of veterinary importance, yet little understood or reported in research.

Figure 1: MRSP infection



Samples for culture and antimicrobial susceptibility testing should be collected from non-responsive skin and ear infections in particular, in order to determine the best therapeutic option. (See Fig. 1) In order to prevent spread of infection from MRSP cases to other animals and the environment, strict adherence to hygiene protocols in veterinary clinics and hospitals is essential.



What is MRSP?

Not unlike MRSA, MRSP are resistant to all beta-lactam antibiotics. Despite recent increased interest in MRSP within veterinary medicine, it has been prevalent for longer than may be realised. *Staphylococcus intermedius* (*S. intermedius*) was initially conveyed in 1976 but its taxonomy has been confused since 2005 when the species *S. pseudintermedius* was described therefore after further research redefining *S. intermedius* to *S. pseudintermedius* as the species that colonises and infects dogs and cats. *S. intermedius* does exist as a pathogen in its own right but is extremely closely related and furthermore extremely rare.

So how is MRSP different from MRSA?

Escalation of MRSA has allowed it to be one of the most prevalent causes of infection in human health. MRSP infections of humans are infrequently reported, but do exist. One in particular reported by Kempker et al (2009) described a human post operative sinus infection caused by MRSP. The patients' pet dog carried a MRSP strain impossible to differentiate from the patients' strain thus implying a potential zoonotic transmission. MRSP, unlike MRSA, zoonotic potential is, however, thought to be rare although comparable studies in the area are few. Thus remains that at present MRSP is more of a problem in veterinary medicine than human medicine. *S. pseudintermedius* treatments in the past were vulnerable to beta lactam antibiotics but since the emergence of MRSP as a significant animal health problem, a new challenge in treatment has arisen as there are limited therapeutic options. MRSP itself is not a direct concern for human health, but it causes an indirect risk to humans, as treatment of MRSP in methicillin-resistant *Staphylococcus aureus* (MRSA) carrying animals may lead to additional resistances in MRSA, which has zoonotic potential. That could compromise efficacy in case of treatment of MRSA in humans. In addition, a possibility of transfer of genetic material coding for additional resistances exists. Measures to be taken should consider risks both to animal and human health.

Conclusion

There is a sudden awareness of MRSP and its dangers within veterinary medicine so much so that it could be described as the MRSA of the veterinary world. The bacteria's multi resistant nature means it can potentially evolve more resistance causing widespread colonisation and infection. Under most circumstances it is not a risk to veterinary staff and clients, as is low risk to healthy humans, especially when coupled with strict infection control procedures. Education within the veterinary sector is paramount to keeping it in control and more research is needed to fully understand this new old superbug.

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