NOTES

A Digest Compressorium Technique for Detection of Trichinella spiralis Larvae

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RÉSUMÉ

La digestion partielle pendant une heure et demie à deux heures, suivie d'un examen au compressorium pour déceler les larves de Trichinella spiralis **dans des tissus musculaires infestés, s'est avérée plus efficace que l'épreuve de digestion Baermann et que l'épreuve directe au compressorium. Ces épreuves ont été faites sur des tissus infestés de larves viables et des tissus contenant seulement des larves mortes. La technique est particulièrement avantageuse pour l'examen de tissus contenant des larves mortes.**

At present, there are two methods for detecting *Trichinella spiralis* in muscle: A. Digest-Baermann technique (1), B. compressorium technique (2).

Technique A takes about 24 hours while B causes eye strain. The substitution of trichinoscope for stereoscope in B has reduced eye strain. However, since this substitution does not improve the contrast between tissue and parasite, detectability of larvae is not increased.

During outbreaks of trichinosis in humans in British Columbia in 1960 and in 1971, large quantities of various suspected tissues were examined by these two methods. It was observed that A was not very helpful when the tissue contained only dead larvae. It was also observed that when the tissue remaining after digestion was examined using compressorium, larvae were easily seen because of the increased transparency of the muscle due to digestion. Therefore, further studies were made in order to determine the optimum period of digestion to render the tissue transparent. This depended, to some extent, on the type of tissue being examined, the thickness of sections cut, whether sections were made parallel or transverse to the muscle fibres and whether the sections

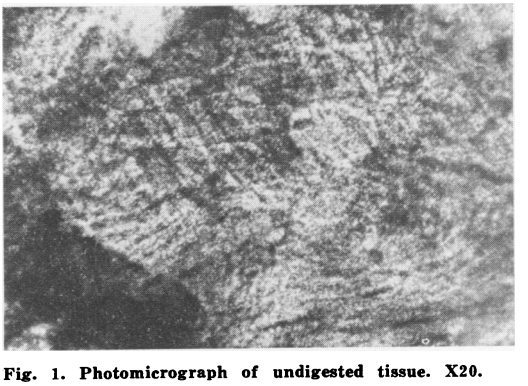

Fig. 1. Photomicrograph of undigested tissue. X20.

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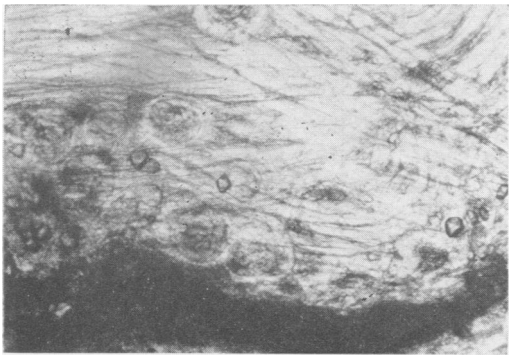

Fig. 2. Photomicrograph of tissue digested for 30 minutes (same field as Fig. 1). X20.

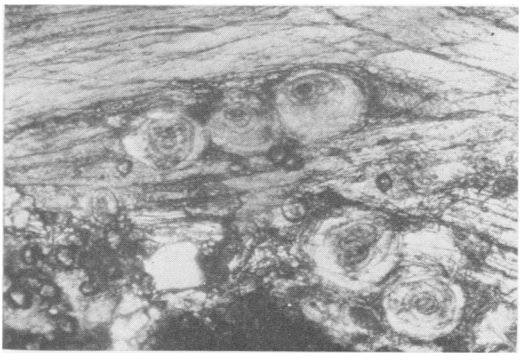

Fig. 3. Photomicrograph of tissue digested for two hours (same field as Fig. 1). X20.

were cut from frozen or fresh tissues. It was found that maximum transparency was obtained by cutting frozen tissue transversely. However, digestion of such tissue for 1.5 to 2.0 hours made it all the more transparent with the result that larvae were seen immediately when present. Digestion for over two hours resulted in excystment and migration of larvae.

Twenty-two larvae were seen in the fluid when ten grams of bear tissue containing only dead larvae was examined by technique A. When the residue was examined by compressorium, it was found that 3704 larvae remained embedded in the tissue. On another occasion, all 54 larvae remained embedded in the tissue. Thus, there is a possibility of a negative diagnosis when A is used for tissue with only dead larvae. Since infection in man is normally diagnosed two to three weeks after ingestion, the incriminated meat does not reach the laboratory until four to five weeks after slaughter of the animal. By this time, the larvae are dead, depending upon storage temperature or treatment of the meat.

Therefore, repeated tests were conducted comparing results of the three techniques viz. A, B and C which consisted of digestion of cut tissue for 1.5 to two hours before compressorium examination. Clarity improved with digestion (Fig. 1 to 3) and detection of trichinella larvae was faster and easier with C. It was not only useful but necessary to examine the tissue by technique C in order to decide whether or not a suspected meat sample was infective material.

Depending solely on A or B can be misleading. If the parasite has not encysted in the tissue, detection of the larvae by B is all the more difficult because the larvae have not curled and lie parallel to the muscle fibre. By using C, a fair estimate of the age of the infection in the tissue can be made from the presence or absence of encystment and, when cysts are present, by the size, shape and calcification of the cysts.

ACKNOWLEDGMENTS

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