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Brief Communication

ISOLATION OF YERSINIA ENTEROCOLITICA 0:3 FROM A WELL SUSPECTED AS THE SOURCE OF YERSINIOSIS IN A BABY

Yersinia enterocolitica has on several occasions been isolated from various water types: well-, stream- and lake-waters (*Highsmith et al.* 1977, *Schiemann* 1978), and water has on some occasions been the source of human yersiniosis (*Eden et al.* 1977). In mid December 1978 an 8-month old child was hospitalized with an acute gastroenteritis, which was diagnosed to be yersiniosis. A blood titer of 800 against Yersinia enterocolitica serotype 0:3 was demonstrated in the patient. Blood samples from the remaining family members all showed a negative Yersinia enterocolitica titer. The well water, being the only water supply to the household, was suspected, since the water was used in the preparation of the baby-food. Yersinia enterocolitica biotype 4, serotype 0:3 was isolated from the unchlorinated well water.

The family lives on a small farm, but they are not farming themselves. The only pet present is a 9-month old English Pointer.

The well is placed in a corner of the small yard, and due to a very low position of the lid in the ground level, the well could easily be contaminated from the surface water, as indicated by the microbiological findings.

W a t e r s a m p l e s from the well were collected from the kitchen tap. Five hundred ml of the water was filtered through a 0.45 μm membrane filter (Seitz-Filtermembranen Typ M) followed by an enrichment of the filter in 10 ml modified Rappaport broth (*Wauters* 1973) at 25°C for 4 days. The enrichment was streaked onto SS-D agar (Salmonella-Shigella agar with 2 % sodium deoxycholate added) and incubated at 25°C for 48 h (*Wauters*). The water samples were further examined on plate count agar at 37°C and 21°C, on Kings-agar B at 21°C, and 100-ml samples were membrane filtered with incubation of the filters on blood agar and on eosin-methylene-blue-agar at 37°C.

F e c a l s a m p l e s from the dog and rats were picked up

from the ground. Material from the samples was, besides an enrichment in modified Rappaport broth, also streaked directly onto SS-D agar. Yersinia enterocolitica suspect colonies were subcultivated for primary screening on BS agar (bromthymol-blue-sucrose-agar) at 25°C for 24—48 h. Yellow, sucrose positive colonies were subcultivated for secondary screening on TSI slants (triple-sugar-iron-agar) and in urea broth. All strains being urease positive and on TSI slants giving the reactions: acid/acid/no gas/no blackening were verified biochemically and serologically.

The water contained no coliforms. The total counts at various temperatures were: Plate count agar at 37°C: 1500 colonies/ml. Plate count agar at 21°C: 3500 colonies/ml. Kings-agar B at 21°C: 6 fluorescent colonies/ml. The following bacteria were isolated from the water: Pseudomonas fluorescens, Alcaligenes, Acinetobacter and Aeromonas. Absence of coliforms in water samples, where Yersinia enterocolitica are present, has been demonstrated by *Schiemann* (1978). The Yersinia enterocolitica strains isolated from the enrichment of the well water belonged to Wauter's biotype 4, serotype 0:3, the most frequent cause of human yersiniosis in Denmark. Biochemical and serological reactions of the isolated Yersinia enterocolitica strains were the following:

Oxidase test (—)	ONPG 22°C (+)
Ornithine decarboxylase 25°C (+)	ONPG 37°C (—)
Phenylalanine deaminase 25°C (—)	Esculin hydrolysis 25°C (—)
Motility 22°C (+)	Rhamnose 25°C (—)
Motility 37°C (—)	Indole 25°C (—)
Arginine dihydrolase 25°C (—)	Nitrate reductase 25°C (+)
Lysine decarboxylase 25°C (—)	Voges-Proskauer 22°C (+)
Lactose (H/L) 25°C (—)	Voges-Proskauer 37°C (—)

Serological testing against human 0:3 sera were positive.

Fecal samples from the dog and rats were all negative for Y. e.

The well water has apparently been the source of infection. Whether enrichment of the yersinia in the baby-food has preceded the consumption of the food could not be established. However, babies must be considered to be susceptible to Yersinia

enterocolitica even in low numbers. Thus in the actual case an initial low contamination of the water might alone be responsible for the infection.

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