

The Inspection of Pig Mesenteric Lymph Nodes: a Possible Source of Salmonella Diffusion.

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Introduction.

The increasing incidence of latent infections in slaughter animals is surely one of the most important problems for the meat inspector at the present time. Even a careful ante-mortem and post-mortem inspection, in fact, does not suffice to diagnose or even suppose the presence of some infectious agents, since animals show no clinical and pathological-anatomic changes.

Among latent infections of slaughter animals of public health relevance we must certainly include salmonellosis (Hellmann, 1977; Kampelmacher, 1980; Grossklaus, 1982). As far as pigs are concerned, in particular, the high incidence of salmonella isolations from the mesenteric lymph nodes of normal slaughter animals is by now a well established fact (Edel et al., 1970; Edel et al., 1976).

This notwithstanding, the cranial and caudal mesenteric lymph nodes must be routinely incised during the inspection of the carcasses, according to the laws that regulate the exchange of meat in the countries of the EEC and to the regulations in force in many countries, among which Italy.

Some researchers have raised objections against these incisions, which would contribute in their view to the spreading of salmonellas rather than to the establishment of a diagnosis (Watson, 1975; Grossklaus, 1982).

For this reason we made a research, in order to determine how many possibilities actually existed to diffuse salmonellas through the blades of the knives used for the incision of the mesenteric lymph nodes.

Material and Methods.

The cranial and caudal mesenteric lymph nodes of 300 normal slaughter pigs coming from home and foreign farms were sampled at the public slaughterhouse. The animals were selected at random, in groups of 20-30 and in different periods of the year. Samples were collected in the best possible way and immediately brought to the laboratory.

At the moment of the analysis the two sets of lymph nodes from each pig were held in boiling water for less than one minute in order to kill surface contaminants. Then they were placed into sterile dishes where they were incised at least twice. Knives with sterile blades were used for each animal and after the incision of every set of lymph nodes the blade was thoroughly rubbed with a swab previously dipped in physiological saline with 0,1% of Tween 80.

The two swabs from the blades of the knives used for the incisions of the cranial and caudal mesenteric lymph nodes of the same pig were added to 30 ml of buffered peptone water. The lymph nodes were then finely chopped with a pair of scissors and inoculated into 150 ml of the same pre-enrichment medium. Incubation followed at 37°C for 18-20 h. Selenite F broth at 37°C (10 ml) and Muller Kauffmann broth at 43°C (100 ml) were used as enrichment media. Subcultures were made on desoxycholate citrate agar and brilliant green agar after 24 and 48 h. Selective agars were incubated at 37°C for 24 h and then examined for salmonellas.

Results.

Salmonellas were recovered from the mesenteric lymph nodes of 97 pigs (32,3%) and from 52 cultures of the swabs from the blades of the knives (17,3%).

It is noteworthy that in 12 pigs the culture of the swabs only yielded salmonellas. Therefore the total number of the positive animals was 109 (36,3%) out of 300 pigs examined.

Discussion.

Our findings confirm the frequent occurrence of salmonellas in the mesenteric lymph nodes of normal slaughter pigs. The relative incidence was particularly high in some groups of animals (up to 93,7%), the lowest recorded being 5,5%.

Salmonella was frequently isolated from the blades of the knives used for the incisions of the mesenteric lymph nodes. Then the possibility of spreading salmonellas through the contaminated knives actually exists. Limiting salmonella diffusion is surely a purpose to pursue in order to prevent salmonellosis in men and animals and the routine incision of the mesenteric lymph nodes during meat inspection is a potential source of salmonella spread.

This consideration, however, is not sufficient in our opinion to justify the abolition of the incisions of the mesenteric lymph nodes, which are indispensable for a correct pathological-anatomic diagnosis. The incisions of other organs could be likewise riskful but nobody ever proposed to abolish them.

What is necessary to do is then to inform the meat inspector about the risks occurring at certain stages of the carcass inspection so that he can behave accordingly, always sterilizing the knife after the inci-

sions of the mesenteric lymph nodes and minimizing in this way the risks of cross contamination.
The transfer of salmonellas from the contaminated knives to clean parts of the carcase can and must therefore be limited only by a strict adherence to hygienic procedures during slaughter and carcase inspection.

References.

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