



PIG CASTRATION

FVE POSITION PAPER

Introduction

Boar taint, the unpleasant smell that sometimes arises when the meat of boars is heated, makes boar meat unsuitable for human consumption as fresh meat. (The meat can however still be used for processed meat products.) To avoid this problem, it is the current practice to surgically castrate male pigs in the first weeks of life. Pig farmers usually do this themselves and are allowed, by law, to castrate male pigs up to a certain age. Anaesthesia is generally not used.

According to EU Directive 63/630/EEC, in pigs older than 3 weeks, surgical castration can only be carried out under anaesthesia and hence by or under the supervision of a veterinary surgeon. The European Commission will release, most likely in the autumn of 2001, a proposal for a Commission Directive¹ amending Directive 91/630/EEC². In this Commission Directive, the maximum age of the piglets for which castration without anaesthetic is allowed will be reduced from 3 weeks to 1 week.

Although surgical castration without prior anaesthesia is legal, the practice is subject to discussion for two reasons. In the first instance, castration without anaesthesia is painful and thus can be said to adversely affect the health and welfare of the pig. In the second instance, castration is subject to discussion for ethical reasons. From an ethical point of view, the animal is accepted as a sentient being. Ethical principles mean that animal health and welfare have to be weighed against the interests of humans. In this instance, the need to castrate pigs, and possible alternatives to castration, should be given due consideration.

Welfare

The surgical castration, without prior anaesthesia, of male pigs is in conflict with animal welfare because it causes suffering to the animal. It is accepted that higher animals, such as pigs, can feel pain. This is based on the analogy principle. This holds that the similarity in anatomy (pain system), physiology (pain perception), and behaviour (expression of pain) between humans and higher animals makes it reasonable to assume that the sensation of pain is analogous in humans and higher animals. It has been scientifically determined, using physiological and ethological parameters, that surgical castration without anaesthesia is a painful intervention. General or local anaesthesia can prevent pain during castration but also inflict some level of pain. Although some consider that the pain reception of young mammals is not yet fully developed, research shows that human neonates and children experience pain in the same way as adults. In addition, it is shown that piglets have a fully developed pain reception system in the first days. Based on this, the belief that the ability to perceive pain is less developed in young animals than in adults is incorrect. The lack of use of anaesthesia is in conflict with the idea that animals should not be exposed to unnecessary pain.

¹ SANCO/2341/2000 – Rev 1 (PVET/2000/EN/2351R1.doc)

² Directive 91/630/EEC is laying down minimum standards for the protection of pigs

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Need for castration

Pork that gives off “boar taint”, when it is heated, is not suitable for usage as fresh meat for human consumption. Extensive study has shown that boar taint is a real problem. Research with panels of consumers has shown that pork from boars gives off an unpleasant odour and flavour more often than pork from female pigs or castrated boars. Boar taint is less of a problem if boars are slaughtered before they are sexually mature.

There is no market for meat from boars in many European countries. The biggest pork market is Germany and it is the consumers in this country, in particular, who do not want meat from boars.

In the early 1980s, there were numerous discussions on the castration of piglets with regard to the legal position of those who performed the castration. There was also a secondary discussion because some were of the opinion that the unnecessary sterilisation of animals should be avoided from a welfare point of view. The castration of piglets was however considered necessary, at that time, because EU regulations forbade the export of meat from boars. It was generally expected that new methods for the detection of boar taint on the slaughter line would be developed, and that they would make castration unnecessary.

In 1991, the EU guideline was changed to enable the sale, on the open market, of the meat of boars with a slaughter weight of 80 kg or less. However, many countries continued to refuse the meat of boars and for this reason the pig industry considered the castration of male piglets still necessary, as there was no solution to prevent boar taint in meat.

On the other hand, it is recognised by many that raising entire male pigs instead of castrates has many potential benefits. Boars have an improved feed conversion and produce a higher percentage of lean meat. It avoids the labour-intensive cost of castration and it has positive environmental aspects. [There will also be less wastage of potentially valuable genetics.]

Alternatives

There are some potential alternatives to the surgical castration without anaesthesia for the production of boar taint-free meat:

- Surgical castration under general or local anaesthesia with additional prolonged analgesia.
- No castration and slaughter at a lower slaughter weight.
- No castration, but use of a technique that can detect boar taint on the slaughter line.
- Immunocastration
- Separated sperm
- Genetic selection
- ...

From a welfare point of view, it would be desirable to castrate piglets under general or local anaesthesia with additional prolonged analgesia; however, there are a number of practical problems associated with this. The use of anaesthetic and analgesic drugs is, in many countries, restricted to veterinary surgeons only. Thus, pig farmers are generally not allowed to anaesthetise the pigs although they are allowed to perform castration. In these cases, if anaesthesia is made compulsory, then veterinary surgeons will have to be available to induce anaesthesia. This has enormous logistic and financial consequences given the

large numbers of animals involved. It can be concluded that castration under anaesthesia, as currently practised, is not a practical alternative.

From an ethical point of view, no castration and slaughter at a lower slaughter weight, does not adversely affect the welfare of the animal. Boar taint is less of a problem if boars are slaughtered before they are sexually mature. This is however, mostly for export reasons, no valid alternative.

In addition, the use of a technique to detect boar taint on the slaughter line, does not adversely affect the welfare of the animal but is also not yet a practical valid alternative. Several methods for the detection of boar taint have been developed and implemented since the 1980s. These methods have been used with varying success, and considerable research needs to be done to optimise detection methods, in order to make them practical and valid alternatives. These techniques however don't solve the problem of the absence of a market for meat with boar taint.

Immunocastration, by which castration is achieved by immunological means, is a recently developed technique. The technique is based on the use of antibodies against gonadotropin-releasing hormone (GnRH). The neutralisation of this hormone by antibodies suppresses the development and function of the testes, and thereby inhibits the development of boar taint. GnRH vaccines are currently being developed. The availability of this technique will be subject to the obtaining of a marketing authorisation by the EU registration process. After this, information on the effects on animal health and welfare and human public health must be distributed.

It is, however, agreed that the pain and the risk of infection with surgical castration is worse than that caused by the injection of the vaccine for immunocastration.

Besides these aspects, public acceptance also plays a role in the discussion of the permissibility of immunocastration. There are many in the pig industry, who fear that immunocastration will have an adverse affect on the public's image of pork. As such, it is too early to consider immunocastration a valid alternative.

Immunological techniques, in which anti-male or anti-female monoclonal antibodies are being developed to attach to sex specific markers on the sperm cell surface, allow the separation of male from female sperm cells. These techniques would allow, via artificial insemination, the creation of herds of only gilts, who produce higher quality meat with a better feed-efficiency than males. It is likely that these techniques will be commercially available in the next couple of years and they could become a promising alternative.

Genetic selection can be carried out in order to breed pigs with less "boar taint", by determining the markers related to skatole and androstenone and the markers related to the age of maturity.

5. Considerations

Under existing legislation, the European Commission and most of the governments entrust the surgical castration of male piglets to pig farmers. These authorities thus allow the surgical castration of piglets without anaesthesia. From a strictly legal point of view, veterinary surgeons can not be held responsible for current practice with regard to the castration of pigs. However, it is not only legal arguments which play a role. Veterinary surgeons are professionally responsible for the well being of animals. This means that in their opinion, animals should not be castrated unless there are well-founded reasons to do so.

In evaluating pig castration, FVE has considered the following points:

- Castration causes pain to the piglets. This pain can be reduced by anaesthetising piglets before castration and by administering additional prolonged analgesia. For practical reasons, this is in many countries not a viable alternative.
- Depending on the acceptance given by the consumer, immunocastration could be a socially viable alternative.
- The necessity of pig castration has to be evaluated with regard to the local presence of realistic practical alternatives for the prevention of boar taint.
- As many markets for pork do not accept boar meat, the pig industry considers it necessary to castrate boars.

Position

FVE is of the opinion that surgical castration has to be re-evaluated. The need for castration still exists because for the moment, there are no valid alternatives to prevent “boar taint”. The need of castrating boars in the future has to be reduced by developing realistic, ethical and practical alternatives.

Recommendations

The above position implies that the castration without prior anaesthesia should be banned. The FVE recognises that this cannot be achieved immediately, but believes that this should be possible in the middle to long term, provided if the following steps are taken:

- Further research is needed on
 - optimisation of methods for the detection of boar taint on the slaughter line
 - surgical and pain reducing techniques (i.e. general and local anaesthesia, pain minimising techniques, post surgical analgesia),
 - pain reception of young pigs
 - consumers acceptance of immunocastration
 - genetic selection for animals (for level of skatole and metabolic rate of androstenone, age of maturity)
 - development of commercially available sex separation techniques of semen
 - management factors reducing the level of skatole and androstenone in male pigs (food, clean housing, lighting periods, female presence)
- The pig industry should start an information campaign to emphasise that overall not castrating pigs has many positive aspects such as improved welfare, improved environmental aspects and better meat quality.
- The abolition of the castration of pigs should be supported by appropriate legislation, as soon as realistic, ethical and practical alternatives are available.