MATING INJURIES IN GILTS

M.J. MEREDITH
DEPARTMENT OF ANIMAL HUSBANDRY & HYGIENE
THE ROYAL VETERINARY COLLEGE, BOLTONS PARK, POTTERS BAR, HERTS. UK.

Prevalence study

A total of 184 matings of 35 Large White gilts were carefully supervised and recorded. The gilts were tested daily for oestrus and mated once on each day of oestrus by one of 4 vasectomised,or 5 fertile Large White boars. The number of periods of oestrus recorded for each gilt, ranged from 1 to 5. Incidents of pain and/or haemorrhage occurred in 9(5%) of the 184 matings and involved 6 (17%) of the gilts and 5 of the boars. Affected gilts were prone to a recurrence of these injuries: they occurred in only 6 (4%) of the 164 matings involving previously unaffected gilts, but in 3 (15%) of the 20 matings involving gilts which had previously been injured.

Rectal intromission occurred during 3 of the 184 matings and involved 3 gilts and 2 boars. There were no untoward sequelae, except that on one occasion the gilt was too frightened to permit a second attempt at copulation, until the next day. Marked bruising of the vulva was observed after two of the matings in this study, but was apparently of no consequence.

Clinical case histories

Service injuries were investigated in 10 Large White gilts, one crossbred gilt and 2 Göttingen Miniature gilts. Altogether there were 21 "incidents" of service injury. An "incident" was defined as the occurrence of pain and/or haemorrhage during natural or artificial insemination, on at least one occasion in the course of one day. In 7 of the 13 gilts, the initial incident of injury occurred during the first oestrous period that breeding was attempted. Injuries were significantly more frequent in the first 3 services (14 incidents) than in subsequent ones ($P<.05$).

The clinical features of the service injuries are summarised in Table 1. In a number of cases, when attempted, it was possible to carry out a successful insemination subsequently on the same day, or on the following day, if the gilt was still in oestrus. However, 7 of the 13 gilts suffered a second incident of service injury at some time after the initial incident; one of these 7 also suffered a third incident of injury.

Table 1. Clinical features of the service injuries

Type of injury	No. of gilts	Number of incidents	Success of insemination attempts		
		Total	First	Subsequent	Next day
A.I.					
H	2	2	2/2	–	–
H + P	1	1	0/1	1/1	1/1
Boar					
P	3	4	0/4	1/1	1/3
H	1	1	1/1	–	1/1
H + P	8	13	0/13	3/8	4/5
Totals	13*	21	3/21	5/10	7/10

H = haemorrhage P = pain (during intromission)
* Two gilts occur in two categories

Nine incidents of injury occurred during matings by vasectomised boars: the 7 of them for which data were available showed a subsequent oestrous cycle of normal duration (19 to 22 days). Twelve incidents occurred during fertile services and fertility data were available for 9 of these: only 3 incidents (2 of them in the same oestrous period) were followed by a pregnancy resulting from the affected oestrous period. Of the remaining 6 incidents (occurring in 4 oestrous periods), where pregnancy was not obtained, one was a single A.I., while in theothers no proper ejaculation was obtained during the 3 oestrous periods concerned.

Diagnostic investigations

These were undertaken in 12 of the incidents which occurred in 10 of the gilts (Table 2). The endoscopic examinations were carried out within 24 hrs, and the autopsies were carried out between 1 and 37 days after the incident.

Table 2. Location of injuries

	Site of injury			
	Vestibule	Urethra	Vest.+urethra	Undetected
No. of gilts	3	2	3	2
No. of incidents	4	2	4	2
Diagnosed by:				
endoscopy	2	2	1	1
autopsy	1	–	1	1
endoscopy+autopsy	1	–	2	–
Type of injury:				
A.I.:haemorrhage	–	–	–	1
haem.+ pain	1	–	–	–
Boar: pain	–	1	–	–
haem.+ pain	3	1	4	1

The vestibule lesions consisted of single areas of ulceration, bruising and haemorrhage in the cranial recesses adjacent to the vaginal ostium. The location of the lesions in relation to the vaginal ostium was: right ventral in one incident; right dorsal in 4 and left ventral in 3 incidents. In 4 cases the vestibule lesions were the only ones detected, while in 4 cases they occurred in conjunction with urethral damage.

Urethral damage was manifested endoscopically by dilatation and bruising of the urethral orifice and emergence of blood. In the cases examined at autopsy there was damage to the cranial extremity of the urethral diverticulum, consistent with entry of the penis.

In 5 of the 10 gilts investigated, the vaginal ostium was constricted by a hymenal ring and, in 2 of these, there was also a vertical cord of hymen tissue bisecting the ostium. It is possible that hymenal constriction may have contributed to the original mating injuries in some of the other 5 gilts, but they had all had successful matings or A.I. before investigation, so it was possible that any constrictions originally present may have been stretched or ruptured. Certainly, in one of the two gilts where A.I. had been used, there had been great difficulty in locating the vaginal ostium.

Of the first 5 gilts with hymenal constrictions, 3 had suffered injury at their first copulation but 2 of them had experienced 2 to 4 previous matings without any apparent problem. In both cases, the constriction of the hymenal opening was incompatible with previous penile penetration of the vagina, and it was surmised that ejaculation may have occurred into the urethra (the urethral orifice was dilated). Both gilts had cystitis at autopsy (Escherichia coli and Proteus were isolated from the bladders).

In 3 gilts, hymenal constrictions were stretched and/or ruptured, during endoscopy, by pressure from a 2 cm. diameter perspex speculum. However, this only prevented recurrence of injury in 1 pig. In the other 2 gilts, failure was attributed to the consequences of previous injury: stretching of the vestibule recess (both cases) and dilation of the urethral orifice (one case).

Other investigations

Six Large White gilts were examined endoscopically before breeding. Four of them had no constriction of the vaginal ostium, and mated successfully. Two gilts had hymenal constrictions: one was dilated and subsequently mated successfully, the other was not dilated and her first copulation was prevented by pain, although she was later mated without problems.

Hymenal constrictions do not always result in abnormal matings. Stumps of ruptured hymen cords have been observed in 2 gilts after successful copulation.

The assistance of Miss J. Smith and Miss L.A. Williams is gratefully acknowledged.

This work was supported by a grant from the Agricultural Research Council.