

SLAUGHTER HOUSE SURVEY OF BOVINE FOOT DISORDERS

T. A. Abid, S. M. Eshoue, M. S. AL. Badrany and A. P. Singh

*Department of Veteriary Surgery and Obstetrics,
College of Veterinary Medicine, University of Mosul. IRAQ*

Foot abnormalities in cattle have been reported from almost all parts of the world and recognised as an important bovine disease (Paynae, 1966, Greenough, *et al.*, 1981). Foot disease causes major economic loss to the dairy and beef industries, but it is one of the most neglected conditions affecting this species. Search of literature does not show any comprehensive report on the incidence of this condition in Iraq. This report presents the incidence of foot abnormalities on the basis of slaughter house survey in Mosul (Iraq).

Materials and Methods

The present study is based on the examination of 1004 cattle for foot deformities, brought for slaughter at the local slaughter house. All the animals were young crossbreds in the age group of 18 to 30 months. The feet of all the beef cattle slaughtered were collected for investigation. The feet were cleaned with running water and carefully examined, using a hoof knife for any foot deformity. The data are tabulated as per the type of foot deformity involving limbs and claws.

Results and Discassion

Foot abnormalities represented 39.5% (396/1004) of all the animals screened at the local slaughter house in this study. Out of total affected animals, 338 were having single deformity (85.4) while the remaining 58 (14.6%) had more than one lesion involving either one or more digits. When an animal suffered from more than one lesion simultaneously, this was considered as one case. The over all incidence observed in the present study agrees with the incidence of 30% and 39% reported by Prentice and Neal (1972) and Neichev *et al.* (1981). However it was much lower than the findings of Lekharu (1976) and Arkins (1981). These workers reported 58.3% and 74% incidence of foot lameness in cattle. In this study the incidence of 39.5% gives an indication of high prevalence of foot abnormalities; however a high proportion of these cases were of regular overgrowth and scissor claws as a rule these were not the real clinical cases of foot lameness.

Various foot abnormalities occurred more often in forefeet (53.3% than in hind feet (23.7%) or in all four feet (23.0%). Both forefeet were involved more frequently (33.3%) than left (11.9%) or right forefoot alone (8.1%), while no difference was seen in involvement of right and left hind foot (Table. 1) The present findings regarding limb distribution of foot lesions are in disagreement with previous reports (Weaver, 1971; Prentice and Neal *loc. cit.* Nigam and Singh, 1980; Greenough, *et al.*, 1981) but corroborates with the observation of Gogoi *et al.* (1981). This difference in involvement of fore-and hind feet might be due to fact that in the present study, the majority of animals brought to slaughter house were young cross bred males, wherein the role of udder as predisposing factor for more involvement of hind feet was

not present as reported by Russell *et al.* (1982). Further more involvement of forefeet than hindfeet observed in this study may possibly be due to confinement of forefeet to soft ground on some farms, which reduced the opportunity of wear and tear.

Table 1 *Limbs and claw distribution of foot abnormalities at slaughter house*

	Fore Limb				Hind Limb				All Limbs
	L	R	L+R	Total	L	R	L · R	Total	
Lateral claw	19	8	—	27	16	13	—	29	
Medial claw	6	4	—	10	2	2	—	4	
Both claws	21	19	—	40	8	15	—	23	
Interdigital space	1	1	—	2	3	1	—	4	
Total	47	32	132	211	20	31	34	94	91
%	11.9	8.1	33.3	53.3	7.3	7.8	8.6	23.7	23.0

L = Left, R = Right, L+R = Left and Right.

Regardless of foot involved, both claws were affected more often than either lateral or medial claw alone (Table 1). However, when involvement of lateral and medial claws were compared, it was observed that the lateral claws were affected more frequently than the medial claws. The foot lesions were seen more in claws of forefeet than that of hind feet. These observations agree with previous reports (Prentice and Neal, *loc. cit.* Eddy and Scott, 1980; Russell, *et al.*, *loc. cit.* Birkeland and Fjeldass, 1984) and may probably be correlated to physical factors such as gait, stance, horn moisture content and forces on the claw.

Regular overgrown hoof (14.3%), whiteline disease (4.4%), scissors claw (4.2%), bruising of sole (4.2%), and double sole (2.8%) were the most frequently observed foot deformities in this study. Other less commonly encountered disorders included hoof fissure, ulceration of sole, heal erosions and ulcer, interdigital hyperplasia, separations of sole, and interdigital granuloma (Table 2).

In animals with more than one lesion (58 cases) overgrown hoof was associated with hoof fissure (6), sole erosion (15), white line disease (15), and double sole (11); while white line disease was associated with sole ulcer (3) and sole erosion (8). Similar observations regarding more common occurrence of overgrown hoof, scissors claw, and bruising of sole have been reported previously (Gibbons *et al.*, 1970, Greenough *et al.*, *loc. cit.* Gogoi *et al.*, 1981). The regular overgrowth and scissors claws were observed more in fore feet or in all four feet than in hindfeet. The conditions were bilateral in majority of cases. This corroborates with findings of Gibbons *et al.* (*loc cit.*), Greenough *et al.* (*loc. cit.*) and Gogoi *et al.* (*loc. cit.*). The high

prevalence of these deformities may possibly be due to stall feeding of high concentrate and lack of wear and exercise (Greenough *et al. loc cit.*)

White line disease was encountered more in either lateral claw or both the claws than that seen in medial claw, which agrees with findings of Greenough *et al.*, (*loc. cit.*) and Gogi *et al.* (*loc. cit.*). This condition could be due to continuous standing and lack of wear and tear of horny material. Certain conditions like hoof malformations and poor horn quality might also predispose to this condition.

Table—2 Slaughter house incidence of various foot disorders

Conditions	No. of animals affected	Percentage of animals found affected
Interdigital hyperplasia	4	0.4
Interdigital granuloma	2	0.2
Regular overgrown hoof	143	14.3
Scissors claw	42	4.2
Double sole	29	2.8
Bruising of sole	42	4.2
Ulceration of sole	8	0.8
Heel erosion	5	0.5
Heel ulcer	5	0.5
White line disease	44	4.4
Hoof fissure	10	1.0
Separation of sole	3	0.3
Septic pedal arthritis	1	0.1
Mixed affections	58	5.8
	396	39.5%

Bruising and ulceration of sole and heel were observed more frequently in lateral claws of both fore and hind feet than in medial claws. The condition may be due to anatomical management and nutritional factors (Greenough *et al.*, *loc cit.*). Hoof fissure having almost equal distribution in lateral and medial claws of fore and hind feet may possibly be due to agroclimatic conditions and sandy soils, High temperature and low humidity result in desiccation and premature removal of stratum externum of the hoof and it is exposed to trauma. Poor nutritional status may also play a part in the development of poor quality horn and fissure.

Summary

A slaughter house survey of foot abnormalities in young beef Iraqi cattle indicated an incidence of 39.5% (396/1004). Of the total affected animals, 338 (85.4%) suffered from a single deformity, while 58 (14.6%) had more than one lesion involving either one claw or more. Regular overgrown hoof (14.3%), white line disease (4.4%), scissors claw (4.2%), bruising of sole (4.2%) and double sole (2.8%) were the most common foot abnormalities. Other less frequently observed conditions included hoof fissure, ulceration of sole, heel erosion and ulcer, interdigital growth separation of sole and septic pedal arthritis. Fore feet were involved more frequently (211) than hind feet (94) or all feet (91).

Acknowledgement

Authors are thankful to Dean, college of Veterinary Medicine and Chairman, Department of surgery and obstetrics for providing necessary facilities to complete this work.

REFERENCES

- | | |
|--|---|
| Arkins, S. (1981) | ... <i>Irish vet. J.</i> , 35 : 185. |
| Birkeland, R. and Fjeldass, T. (1984) | ... <i>Nordisk. vet.</i> , 36 : 146. |
| Eddy, R.G. and Scott, C.P., (1980) | ... <i>Vet. Rec.</i> , 106 : 140. |
| Gibbons, J.W., Catcott, J.E. and Smithcors, F.J., (1970) | ... <i>Bovine Medicine and Surgery and Herd health management</i> , 1st ed. Amer. Vet. Public INC. Wheaton, Illionis, P. 585. |
| Gogoi, S.N., Nigam, J.M. and Singh. A.P., (1981) | ... <i>M.V.P.</i> , 62 : 941. |
| Greenough, P.R. MacCallum, F.J. and Weaver, A. D. (1911) | ... <i>Lameness in cattle</i> . Wright. Scient:chnica Bristol, England. |
| Lekharu.,J.C., (1976) | ... <i>Studies on the incidence, etiology, and surgical treatment of overgrowth of hooves in crossbred animals</i> . M.V.Sc. Thesis submitted to Assam Agricultural University, Jorhat. |
| Neichev, O., Boduror, N. Binev, Detrov. M., M., Filipov, Z.H., Khubenov, K.H., Dinev, D. and Stoichovski, P., (1981) | ... <i>Vet. Sbirka</i> , 79 : 16. |
| Nigam, J.M. and Singh, A.P. (1980) | ... <i>M.V.P.</i> , 61 : 621. |
| Paynae, J.M., (1966) | ... <i>Br. vet. J.</i> , 122 : 183. |
| Prentice, D.E. and Neal P.A., (1972) | ... <i>Vet. Rec.</i> , 91 : 9. |
| Ryssll, A.M., Rowlands, G.J., Shaw, S.R., and Weaver, A.R. (1982) | ... <i>Ibid.</i> , 111 : 155. |
| Weaver, A.D. (1971) | ... <i>Ibid.</i> , 89 : 288. |