ABSTRACT

A study was conducted to assess the type and prevalence of abnormalities occurring in the female reproductive tracts of 405 buffalo cows slaughtered at Mosul abattoir. Out of the 405 buffalo genital tracts examined, various abnormalities with different degrees of severity were observed in 216 (53.3%) of cases. Twenty-two (5.4%) were pregnant and the remaining 41.2% (167/405) were macroscopically normal. The most common abnormalities encountered were endometritis 50 (12.3%). Histological examination revealed a chronic endometritis (76%; 38/50), subacute endometritis (18%; 9/50) and acute endometritis (6%; 3/50), while metritis cases (2.7%; 11/405) were of the chronic type of inflammation. All perimetritis cases (1.5%; 6/405) were characterized by increased thickness of uterine serosa with yellowish colored pus accumulation. Adhesions between vaginal serosa and rectum were observed. The parametritis cases (0.7%; 3/405) observed with severe abscess and yellowish colored content and hard consistency were found in the ligamentum lata and ligamentum intercornuine. One case of uterus didylphis was recorded. In conclusion, uterine abnormalities seem to be an important problem with possible subsequent infertility in buffalo cows in Mosul leading to slaughter and economic losses.

Keywords: buffaloes, uterus, post mortem, prevalence, pathological abnormalities, Mosul

INTRODUCTION

Metritis is one of the most important disorders in buffaloes (Rao, 1982; Rao and Sreemannarayana, 1983, Azawi et al., 2007; Azawi, 2008), causing high economic losses due to prolonged days open and prolonged intercalving intervals, resulting in involuntary culling (Esslemont and Peeler, 1993). The incidence rate of uterine infection in buffalo cows was much higher than in cows (Jainudeen, 1986). In India, Raman and Bawa, (1977) found high prevalence of postpartum infections (38.54%) in buffalo cows. Metritis was recorded at an incidence rate of 25% (Sar et al., 1996). In Pakistan, Usmani et al. (2001) recorded an incidence of 24% of uterine infection among buffalo cows. In Malaysia, the incidence rate was the same as in India, with high incidence of ovarianbursal adhesions (Jainudeen, 1986). In Egypt, Ghanem et al. (2002) recorded a 22.4% incidence of endometritis in Egyptian buffalo cows. In Iran, Moghami et al. (1996) recorded an incidence of 33.2% of endometritis

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in buffalo cows, and recently, Moghaddam and Mamoei (2004) recorded an incidence of 29.4% of infertility problems including endometritis and metritis in Iranian local breed buffalo cows. In Iraq, Al-Fahad (2000) and Al-Fahad et al. (2004) recorded a 43.3% incidence of chronic endometritis in Basra buffalo cows. While Alwan et al. (2001) recorded a prevalence of 47.9% of endometritis in Baghdad buffaloes. The higher incidence of uterine infections in buffaloes than in cows might be due to poor hygiene, vaginal stimulation for milk let down and possibly, wallowing (Azawi, 2006; Azawi et al., 2008a; Azawi, 2009). Buffalo cows are culled and sent to slaughterhouse either because they are uneconomic to maintain or else because they have some disease problem. Hence, abattoirs are a good source for studying pathological lesions of buffalo reproductive organs that are severe enough to cause infertility and even sterility (Azawi et al., 2008b). The present study was conducted to determine the extent of metritis present in buffalo cows slaughtered in Mosul.

MATERIALS AND METHODS

Buffalo cow reproductive tracts of animals slaughtered at Mosul abattoir were collected at random intervals, from January 2006 to August 2009. A total of 405 of mature primiparous and pluriparous genital tracts were examined. The specimens were transported to the College of Veterinary Medicine, University of Mosul. Each specimen was examined grossly in the laboratory in order to exclude any specimen containing reproductive abnormality. All cases were examined for presence of fetuses. Pregnant specimens were discarded. Then the vagina, uterus and uterine tubes were visually inspected for cross lesions. The vagina and uterus were opened up to utero-tubal junction and examined. Ovaries were inspected for cross lesions and the number of corpora albicantia (CA) and side of the ovary with corpus luteum (CL) recorded. A pair of ovaries with either a corpus hemorrhagicum (CH), a large CL and > 5 mm follicle(s) in diameter or a regressing CL with follicle(s) > 6 mm in diameter were classified as active and the animals as cycling. When there was no CL or CH or the presence of a regressed CL without > 5 mm in diameter follicle(s), such ovaries were classified as inactive and the animals as noncycling. A regressing CL coupled with an incomplete involuted uterus was classified as post-parturient anestrous. Corpora albicantia replacing the corpora lutea of pregnancy are large and tend to persist indefinitely (Roberts, 1986). They are more prominent in buffaloes, and can therefore be used to estimate the parity of an animal (Jainudeen et al., 1983). An animal with more than 7-10 CA, with no CL or CH, and without > 5 mm diameter follicle(s) was regarded as being in anestrous due to old age or senility.

RESULTS

Reproductive organs from 405 animals were examined; 5.4 % (22/405) of the animals were pregnant, and 41.2% (167/405) were cycling. Various abnormalities in the uterus with different degrees of severity were observed in 88 (21.7%) of the cases. The prevalence of the various uterine abnormalities of buffalo cows are presented in Table 1. One case (0.2%) of hydrometra was recorded. The uterus was thin-walled due to accumulation of clear and watery fluid (about 300-350 ml) in the lumen of corpus uteri and both uterine horns with stenosis of the cervical lumen. This lesion
was accompanied by atrophy of caruncular and follicular cyst in the right ovary. Mucometra were found in three (0.7%) cases; accumulations of 200-300 ml of clear mucinous fluid were detected in the lumen in corpus and cornu uteri. Mucometra was accompanied with follicular cyst and cystic corpus luteum in two cases. Two cases of pyometra were recorded. In these cases, accumulations of thick dense whitish-yellowish pus discharge of 300-500 ml were detected in uterine lumen. Inflammatory changes of endometritis were found in 50 (12.3%, 50/405) and classified according to histological examination as chronic endometritis (76%; 38/50), subacute endometritis (18%; 9/50) and acute endometritis (6%; 3/50), while metritis cases (2.7%; 11/405) were of the chronic type of inflammation. All perimetritis cases (1.5%; 6/405) were characterized by increased thickness of uterine serosa with yellowish colored pus accumulation. Adhesions between vaginal serosa and rectum were observed. The parametritis cases (0.7%; 3/405) observed with severe abscess and yellowish colored content and hard consistency were found in the ligamentum lata and ligamentum intercornuale. One case of uterus didylphis was recorded. This defect is characterized by presence of completely separated cervices, each one leading to a separate uterine horn.

**DISCUSSION**

Macroscopic and microscopic findings of endometritis and metritis were identical to those previously reported (Azawi, 2006) and in agreement with those found by Abalti et al., 2006, who reported 10.8%. On the other hand, higher incidence rates of endometritis of 22.4%, 24.7%, and 25% were obtained by Moghaddam and Mamoei, 2004; Sar et al., 1996; Ghanem et al., 2002) in Iranian, Indian and Egyptian buffaloes, respectively. Endometritis and metritis may

<table>
<thead>
<tr>
<th>Uterine abnormalities</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrometra</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Mucometra</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Pyometra</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Endometritis</td>
<td>50</td>
<td>12.3</td>
</tr>
<tr>
<td>Metritis</td>
<td>11</td>
<td>2.7</td>
</tr>
<tr>
<td>Perimetritis</td>
<td>6</td>
<td>1.5</td>
</tr>
<tr>
<td>Parametritis</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Uterine edema</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Perimetrial adhesions</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Parametrial adhesions</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Parametral abscess</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Uterus didylphis</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total uterine abnormalities</strong></td>
<td><strong>88</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total reproductive tracts examined</strong></td>
<td><strong>405</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
result from inadequate hygienic conditions in the postpartum period or during parturition, retained placenta and traumatic lacerations due to dystocia. While studies concerning incidence of uterine diseases in southern Iraqi buffaloes (El-Dossokey and Juma, 1973; Alwan et al., 2001; Al-Fahad et al., 2004), showed much higher incidences than the present study. However, this disagreement can be accounted for largely by the differences in the definition of uterine infections between the present and previous studies. In addition, differences in breed, nutrition and management might play a role in the differences between the studies. Results of histopathological studies revealed a high incidence of chronic metritis. These observations were in agreement with Jajo-Azar (2000) and Al-Sharum (2000). Uterus didylphis, or true double cervix, recorded in this study is a congenital anatomical defect of the female genital tract of monotocous species, including cattle and humans (McEntee, 1990). This defect is characterized by presence of completely separated cervices, each one leading to a separate uterine horn. The condition has been attributed to failure of fusion of the caudal portions of the paramesonephric ducts during embryonic development, resulting in a double cervix / or a divided uterine fundus (Roberts, 1986). Noakes et al. (2002) claimed that these cases could conceive normally but may show dystocia due to a fetal limb entering each cervical canal. Case reports of uterus didylphis in cows have been sporadic (Fathalla, 2000). It is believed that this is the first report of uterus didylphis in buffaloes.

In conclusion, uterine abnormalities seem to be an important problem with possible subsequent infertility in buffalo cows in Mosul. The high proportions of endometritis and chronic metritis are the major problems in buffalo herds in Mosul leading to slaughter and economic losses.

REFERENCES


