Surgical Treatment of Upward Fixation of the Patellar

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Introduction

• The gait of the hind limb was abnormal
• inability to flex the stifle joint
• tarsus and fetlock joints was able
• temporary or permanent
• Unilateral or Bilateral
• with the limb remaining in extension for a prolonged period
• as the dorsal aspect of the foot was dragged along the ground while walking
• and subsequent hyperflexion of the stifle
Introduction

- medial trochlear ridge larger than lateral trochlear ridge
- notch between medial trochlear ridge and femur
- Non patellar luxation
- A surgical treatment was decided to correct this case by horizontal incision of the medial patellar ligament near insertion site at tibial tuberosity can be presented normal gait (Athichad, 2001)
Etiology

- major potential factors for patellar fixation in cattle are “nutrition deficiency”
- exploitation activity
- external traumas
- breed and Genetic predisposition
- morphological changes of the medial trochlea ridge of the femur
### Table 1. Cattle with dorsal patellar fixation, according to breed, the season in which the condition occurred and number of affected limbs.

<table>
<thead>
<tr>
<th>Breed</th>
<th>Season</th>
<th>Affected limb</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry</td>
<td>Rainy</td>
<td>Total</td>
<td>Unilateral</td>
<td>Bilateral</td>
<td>Total</td>
</tr>
<tr>
<td>Bos indicus</td>
<td>81</td>
<td>22</td>
<td>103</td>
<td>77</td>
<td>26</td>
<td>103</td>
</tr>
<tr>
<td>Bos taurus</td>
<td>66</td>
<td>29</td>
<td>95</td>
<td>63</td>
<td>32</td>
<td>95</td>
</tr>
<tr>
<td>Crossbred</td>
<td>85</td>
<td>24</td>
<td>109</td>
<td>84</td>
<td>25</td>
<td>109</td>
</tr>
<tr>
<td>Buffalo</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>233</td>
<td>76</td>
<td>309</td>
<td>226</td>
<td>83</td>
<td>309</td>
</tr>
</tbody>
</table>

*Breed Silvaea et al., 2004*
<table>
<thead>
<tr>
<th>Breed</th>
<th>Average age (years)</th>
<th>Gender</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Bos indicus</td>
<td>6.15</td>
<td>6</td>
<td>97</td>
<td>103</td>
</tr>
<tr>
<td>Bos taurus</td>
<td>4.65</td>
<td>7</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>Crossbred</td>
<td>5.70</td>
<td>3</td>
<td>106</td>
<td>109</td>
</tr>
<tr>
<td>Buffalo</td>
<td>5.80</td>
<td>-</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>16</td>
<td>293</td>
<td>309</td>
</tr>
</tbody>
</table>

**Table 3.** Cattle with dorsal patellar fixation and classified according to breed, age (in years) and gender

Silva et al., 2004
<table>
<thead>
<tr>
<th>Breed</th>
<th>Reproductive category</th>
<th>Calved and nursing cattle</th>
<th>Pregnant</th>
<th>Calving</th>
<th>Not pregnant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bos indicus</strong></td>
<td></td>
<td>23</td>
<td>11</td>
<td>54</td>
<td>9</td>
<td>97</td>
</tr>
<tr>
<td><strong>Bos taurus</strong></td>
<td></td>
<td>19</td>
<td>16</td>
<td>49</td>
<td>4</td>
<td>88</td>
</tr>
<tr>
<td>Crossbred</td>
<td></td>
<td>25</td>
<td>18</td>
<td>52</td>
<td>11</td>
<td>106</td>
</tr>
<tr>
<td>Buffalo</td>
<td></td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>67</td>
<td>45</td>
<td>157</td>
<td>24</td>
<td>293</td>
</tr>
</tbody>
</table>

**Table 2.** Female cattle effeted with dorsal patellar fixation and according to breed and reproductive category.

Silva et al., 2004
History

- A 3-year-old American Brahman heifer
- abnormal gait and right stifle joint posture
- While walking, showed prolong extension of right hind limb with mild stiffness
- dragging of the toe along the ground
- and subsequent hyperflexion of the stifle
Figure 2. Prior to surgery. While walking (A) showed prolong extension of right hind limb with mild stiffness and dragged her toe on the floor (B,C) and subsequent hyperflexion of the stifle (D,E and F).
Clinical Findings

- General condition was excellent
- Good flesh, appeared bright and alert
- Good appetite
- Body condition score 2/5
- Heart rate 80 per minute
- Respirations 28 per minute
- Temperature 102 °F
- Mucus membrane was pink
- Rumen contraction rate 2 per 3 minute
diagnosis

- Clinical observation a diagnosis of upward fixation of the patella was made
- Palpation of right stifle at standing did not reveal any abnormalities
- Medial patellar ligament was rigid
Surgical treatment

- Sedative with xylazine hydrochloride 0.1 mg/kg IM
- Restrainted with a rope in lateral recumbency
- Prepared aseptically for surgery
• Subcutaneous and deep infiltration with 8 mL of 2% lidocaine hydrochloride over the medial and middle patellar ligaments
• A 3 cm linear incision was made 0.5 cm lateral to the medial patellar ligament near its insertion on the tibial tuberosity
• Artery forceps were used to bluntly dissect the fascia from underneath the medial patellar ligament. When the forceps could be under the medial patellar ligament.
• Horizontal insertion of the medial patellar ligament near its insertion on the tibial tuberosity
• The skin edges were apposed with # 2 supramid
• penicillin G 25,000 IU/kg IM SID 5 day
• phenylbutazone 10 mg/kg IM then 5 mg/kg SID 5 day
Results of surgery

Figure 8. Postsurgery. Lateral photograph demonstrating normal stride immediately after medial patellar desmotomy.
Results of surgery

- after operated, she presented normal gait
- In one month after operated, she revealed normal gait and the surgical site was no complication
Thank you for your attention.