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| Drug Used | Notes | Calculations |
| Banamine (Flunixin Meglumine) – NSAID  *Given at 2:15 p.m.* | Administered IV for pain control/relief.   * *Total dose should not exceed 2.2 mg/kg* * *Should not be used in bulls intended for breeding as the effects in these animals has not been investigated.* * *Withdrawal period: Meat (4 days), Milk (36 hours)* * *This drug is not licensed to be used for dehorning – only Meloxicam is.* | = *1.98 ml* |
| Penicillin-Streptomycin (Antibiotic)  *Given at 2:27 p.m.* | Administered IM for preoperative antibiotic prophylaxis as this combination drug provides broad spectrum activity.   * *Withdrawal period: Meat (21 days); Milk (3 days)* * *Should not exceed 6 ml per injection site in cattle.*   *The calf became laterally recumbent less than a minute after administration of this drug. Since the signs seen were not consistent with anaphylactic reaction, and all the proper steps were taken to ensure that the injection was indeed IM (not IV), the calf’s reaction was thought to be due to the pain associated with the entire 9 ml being injected into 1 site. The calf regained its bearings soon after.* | = *9 ml* |
| Lidocaine (Local anaesthetic)  *Given at 2:40 pm* | Administered around the corneal nerve to provide short-term pain control (1-2 hours).   * *Withdrawal period: Meat (5 days); Milk (96 hours).* * *Toxic dose is 10 mg/kg, so try to stay at 5-7 mg/kg.*   *The left nerve block took effect after minutes as was evident by the calf’s inability to feel pin pricks to that area. The right cornual nerve block did not have any effect and had to be repeated at 2:50 pm. It took effect 4 minutes later.* | *5 ml of 2% lidocaine was injected at each site – left and right cornual nerve.* |

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| Back-up Drug | Use |
| Tolazoline | Reversal of the sedative and analgesic effects of xylazine if administered IV, at a dose of 2-4x that of xylazine.  Onset may occur within 5 minutes of administration depending on depth and duration of xylazine-induced sedation. |
| Epinephrine (1 mg/ml) | To counter Type I hypersensitivity reactions which are a major cause of adverse drug reactions. Via the IM/SC route at a dosage of 0.02 mg/kg |
| Atropine (1 mg/ml) | To lessen the cardiac depressing effects of xylazine, i.e. prevent bradycardia without affecting sedation.  Via the IM/IV route at a dosage of 0.04 mg/kg |
| Xylazine (20 mg/ml)  Ketamine (100 mg/ml) | To facilitate easier restraint and control of the animal if needed, through their immobilization effects. Via the IM route at a dosage of 0.025 mg/kg for Xylazine, and 1mg/kg for Ketamine. |