1. PURPOSE
1.1- To outline the procedure for anesthetizing calves for LOPU (Laparoscopy Oocyte pick-up)

2. RESPONSIBILITY
2.1- Qualified technical staff or principal investigator (and delegate).

3. MATERIALS
- Ketamine
- Diazepam
- Xylazine
- Isofluorane
- Thiopental
- Syringes
- Hypodermic needles (20G)
- Anesthesia Masks of different sizes
- Endotracheal tubes of different sizes (10 to 14 diameter x 55cm long)
- Artificial tears (eye ointment)

4. PROCEDURES
4.1- Pre-Anesthesia: Animals must be fasted at least 24 hours and have no water for 12 hours prior to surgery.

4.2- The pre-anesthetic is:

<table>
<thead>
<tr>
<th>Drug name</th>
<th>Dosage</th>
<th>Administration Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylazine (*)</td>
<td>0.05-0.1mg/Kg</td>
<td>Intravenous (IV)</td>
</tr>
<tr>
<td>Ketamine</td>
<td>2 to 5 mg/Kg</td>
<td>Intravenous (IV)</td>
</tr>
<tr>
<td>Diazepam</td>
<td>0.1 to 0.2 mg/Kg</td>
<td>Intravenous (IV)</td>
</tr>
</tbody>
</table>

Or

<table>
<thead>
<tr>
<th>Drug name</th>
<th>Dosage</th>
<th>Administration Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiopental</td>
<td>5-10 mg/Kg</td>
<td>Intravenous (IV)</td>
</tr>
</tbody>
</table>

- Always inject the Xylazine first, wait for five minutes, then proceed to inject the Ketamine/Diazepam which can be mixed in the same syringe prior to administration.

(*) Note: Always have Telazoline® available when working with xylazine in case of respiratory arrest. Telazoline is a reverser of Xylazine and must be injected IV slowly at a dose of 4 mL/100 Kg body weight.
4.3- Endotracheal (ET) tube insertion (when applicable):

a. Once jaw is relaxed it is possible to intubate.
b. In dorsal or lateral recumbency, open mouth and pull tongue on the side.
c. Using a laryngoscope, locate and visualize the epiglottis.
d. Pre-lubricate ET tube with lidocaine gel
e. Spray lidocaine in the throat to desensitize the area.
f. Insert ET tube (size 10 to 14 diameter, 55 cm long) in the trachea making sure it is not inserted in the esophagus by listening for breathing.
g. Inflate the balloon with a syringe loaded with air and fix the ET tube to the mandible using tape.
h. Connect to anesthetic machine
i. Alternatively, if intubation is not performed, a large dog mask is used for anesthesia.
j. Apply ophthalmic ointment (“artificial tears) to both eyes to keep the moist.

4.4- Anesthesia:

a. Start Isoflurane vaporizer at 5% until animal has a good anesthesia depth; then decrease to 2-3% depending on the weight of the animal.
b. Oxygen flow level should be at 1.5 - 2.5 liters per minute.
c. Monitor the heart rate using a stethoscope and corneal reflex in order to assess the plane of anesthesia.
d. Monitor breathing watching the animal, the bag and the expiration valves. In the event of an arrest immediately alert the surgeon and switch the machine to 100% oxygen until the breathing recovers.
e. When using a mask, make sure the animal doesn’t have thick phlegm/saliva which creates difficulty with breathing. If needed, proceed to clean the excess of phlegm with paper towels.
f. Since “isofluorane” is not metabolized by the liver, the animal, once “isofluorane” is cut off, will wake up rapidly. “Isoflurane” supply should only end once suturing is completed.

5. RELATED SOPs

5.1- Calf Preparation for Surgery – LARU# 13