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| A  D  C  B |

The above pictures show the steps taken by Group 9 students in the Surgery Lab, to dehorn a calf using gidly wire.

A – The obstetric wire was placed with a 1cm distance of skin around the horn, tightly and then tensed by the handler. The wire was pulled vigorously to produce heat and used to cut through the skin and horn. B – The horn was removed resulting in an open, exposed frontal sinus, noting the calf’s age. C – A quaternarizer was used to stop haemostatis from the cornual artery and its branches. D – Post-operative treatment was commenced by anti-myiasis and antimicrobial topical agents. The blood and horn dust was vigorously cleaned using rubbing alcohol. This was done to prevent myiasis, to uphold a standard to the Veterinary profession and also, out of respect for the calf.

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| **Method** | **Description** | **Advantages** | **Disadvantages** |
| **Chemical** | A caustic paste of potassium, sodium or calcium hydroxide is applied to the horn button. The best results are obtained when applied to the horn button as soon as it can be palpated, which is within 3-7 days after birth. | Not invasive  No chance of infectious agent spread throughout calves | Welfare issues. Discomfort to the calves  Can run downward to the eye, thus causing ocular trauma. |
| **Thermal** | Burn thoroughly to destroy the germinal tissue around the horn bud or there will be re-growth. The technique is used in small calves which are small enough for the dehorner to fit comfortably around the horn button. | Germinal tissue is destroyed, preventing re-growth. | Traumatic to animals if used for too long and without local anaesthetic. |
| **Tube dehorner** | A tube gauge or Robert’s dehorner makes a circular cut when twisted over the base of a horn bud on young calves. An upward twist will scoop out the horn. | Minimal haemorrhage with pressure being applied to the opening | May be performed incorrectly resulting in growth. |
| **Gouge Dehorner** | Various-sized Barnes dehorners, can be used on the claves from 3 months of age onwards. The dehorner must be able to fit around the base of the horn to remove a 1cm ring of skin.  Pushing down on the handles and forcing them apart, the sharp metal edges make an elliptical cut that removes the horn and exposes the cornual arteries.  Hemostatic forceps are used to grasp and twist any cornual artery and cornual a. branches. | Can be used on older cattle  Lessens the threat of trauma to other animals and to humans | Frontal sinuses are left exposed. Myiasis can result if not properly cared for. |
| **Keystone** | A large cutting instrument which has two opposing blades that cut the horn when brought together by two long handles. | Large heifers, cows and smaller bulls | Room is needed to accommodate the handles  A tourniquet is sometimes used which can lead to a non-healing wound if not properly cared for. |
| **Obstetrical Wires** | Used when a cutting device will not work | When a cutting device will not work for really large horns  Cow regrowth that curves into the head | Relatively slow technique compared to the others so local anaesthesia is recommended.  Horn dust may fall into the open sinus and be an irritant resulting in a sinusitis |

*Table 1 highlighting the brief description of the various methods to dehorn as compiled from Farm Animal Surgery by Fubini and Ducharme*

**References:-**

**Farm Animal Surgery by Susan L. Fubini and Norm G. Ducharme**