Name: _____

CASE

Activity 8.4.1 Give Me One More Shot

Purpose

Prevention of diseases often includes administering shots to animals. The types of shots most commonly given by animal producers without the assistance of veterinarians are intramuscular (IM) and subcutaneous.

Intramuscular shots are given directly into the muscle tissue of an animal. The advantage of IM shots is the medication is typically absorbed more thoroughly and quickly. However, IM shots can cause lesions and abscesses in the muscle tissue. Subcutaneous shots are injected between the skin and muscle. These shots cause less damage to muscle tissue and meat cuts. Not all medications can be absorbed this way and others have slower absorption rates. What do you think an IM shot looks like in the muscle after a producer has administered the shot?

Materials

Per student:

- Chicken thigh
- Dissection pan
- Disposable gloves
- Safety goggles
- Lab apron
- Dissection scalpel
- 3cc syringe
- 2 18-gauge needles
- Medicine Vial 1
- Medicine Vial 2
- Pencil
- *Agriscience Notebook*

Procedure

You will be simulating the process of administering shots to an animal. Observe the correct procedure for filling a syringe during your teacher's demonstration.

Safety Precautions

- Wear correct personal protective equipment.
- Keep cap on needle at all times unless you are filling the syringe or injecting the medicine.
- Dispose of needles in the sharps container provided by your teacher.

Part One – Filling the Syringe

Your teacher will perform a demonstration on how to properly fill a syringe. Record the steps involved in filling a syringe in Table 1 of *Activity 8.4.1 Student Worksheet*. In addition to each step, you will record the key points for each step.

Part Two – Intramuscular Shot

1. Obtain a chicken thigh and dissection pan from your teacher.
2. Place a needle on the syringe. This needle will be used for drawing medicine from the vials.
3. Follow the correct procedures from Table 1 to draw 2cc of medicine from Medicine Vial One.
4. Place the second needle on the syringe. This needle will be used for injections.

5. Remove the cap from the needle.
6. Gently rub or pat the area where you will give the injection.
7. Using a darting motion, quickly, yet gently insert the needle into the muscle at a 90° angle.
8. Draw back on the plunger gently. If the plunger fills with blood, you have hit a vein and need to remove the needle and stick the animal again in a slightly different spot. (**NOTE:** You will not draw blood with your chicken, but when working with a live animal it is very likely.)
9. Depress the plunger, injecting the medicine into the muscle of the chicken thigh.
10. Remove the needle from the animal and carefully replace the cap.
11. Gently rub the site of injection.
12. Repeat the steps for an IM injection, but this time fill your syringe using Medicine Vial 2. Remember to switch needles between drawing medicine and giving injections each time.
13. Inject Medicine Vial 2 at a different site on the thigh.

Part Three – Subcutaneous Shot

1. Fill your syringe with 4cc from Medicine Vial 1 using the needle for drawing medicine and the procedures from Part One.
2. Switch to the injection needle and remove the cap from the needle.
3. Pinch a small amount of skin away from your first two injections between your thumb and forefinger and gently lift up.
4. Insert the needle nearly parallel to the muscle between the skin and muscle.
5. Depress the plunger, releasing the medicine between the layer of skin and the muscle.
6. Quickly withdraw the needle and carefully replace the cap.

Part Four – Observing Injections

1. Carefully cut through the skin on the thigh of your chicken with the scalpel and peel back to observe the three injection sites.
2. Cut across each of your intramuscular injections and observe what each medicine has done in the muscle.
3. Remove your gloves in a manner that prevents cross contamination as demonstrated by your teacher.
4. Record your observations of each injection site in Table 2 of *Activity 8.4.1 Student Worksheet* including what the medicine has done at each site and how the medicine is distributed throughout the tissues.
5. Answer the Analysis Questions under the tables in the worksheet.
6. Clean up your workspace as instructed by your teacher. Thoroughly wash all equipment including your hands.

Conclusion

1. How would giving shots to a live animal be more difficult?

2. Explain the advantages for both subcutaneous shots and intramuscular shots.
    - Subcutaneous –
    - Intramuscular –

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Activity 8.4.1 Student Worksheet

Table 1. ***Syringe Demonstration***

Steps involved in filling a syringe	The key point to remember when performing the step
1.	
2.	
3.	
4.	
5.	
6.	

Table 2. ***Injection Observations***

	Sketch Injection Site	Description of injection site
Intramuscular Medicine 1		
Intramuscular Medicine 2		
Subcutaneous Medicine 1		

Analysis Questions

1. Describe the differences you felt when injecting Medicine 1 and Medicine 2 intramuscularly.

2. What differences did you visually observe between the intramuscular injections of Medicine 1 and Medicine 2?

3. What happened to the medicine in the subcutaneous injection?

4. What do you think caused the differences in the shots you administered?