

Canine Spay Curriculum



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Table of Contents

Table of Contents 3

Curriculum Structure..... 4

Lesson Structure..... 4

Lesson One – Canine Female Reproductive Anatomy..... 5

 FOCUS: What Stays and What Goes..... 6

 LEARN: Reproductive Parts for Spay 9

 REVIEW: Reproductive Anatomy Diagram..... 12

Lesson Two – How to Spay a Dog..... 19

 FOCUS: Quiz Your Knowledge 20

 LEARN: Step by Step Canine Spay..... 23

 REVIEW: Practice Makes Perfect 30

Sources 35

Canine Spay Curriculum

This curriculum will teach the reproductive anatomy of female dogs as well as appropriate procedure and technique for canine spay.

Author



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Curriculum Structure

The *Canine Spay Curriculum* is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Canine Female Reproductive Anatomy	60 minutes
Two	How to Spay a Dog	90 minutes
	Total	2-3 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table, which lists lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which contains some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a demonstration, or a review of previous lesson information. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Canine Female Reproductive Anatomy

Lesson Overview

Being able to identify and understand the structure and function of a female dog's anatomy is essential for performing a canine spay. This lesson will detail the structure and functions of the canine female reproductive tract.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify reproductive organs of female dogs
- Understand the structure and function of the reproductive tract
- Understand the purpose of canine spay

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• <i>Canine Spay: What Stays and What Goes</i> worksheet • <i>Canine Spay: What Stays and What Goes – Answer key</i>	1. Print/photocopy the <i>Canine Spay: What Stays and What Goes</i> worksheet (one per participant).	10 minutes
LEARN	• <i>Reproductive Parts for Spay Note Guide</i> • <i>Canine Female Reproductive Anatomy</i> slide presentation	1. Print/photocopy <i>Reproductive Parts for Spay Note Guide</i> (one per participant). 2. Prepare the <i>Canine Female Reproductive Anatomy</i> slide presentation for viewing.	40 minutes
REVIEW	• <i>Canine Female Reproductive Anatomy</i> slide presentation • <i>Reproductive Diagram Quiz</i> • <i>Reproductive Diagram Quiz – Answer Key</i>	1. Leave diagram up from slide 25 of the <i>Canine Female Reproductive Anatomy</i> slide presentation. 2. Print/photocopy the <i>Reproductive Diagram Quiz</i> (one per participant).	10 minutes

Lesson One – Canine Female Reproductive Anatomy

FOCUS: What Stays and What Goes

10 minutes

Purpose:

Participants test their knowledge of what parts are removed during a canine spay.

Materials:

- *Canine Spay: What Stays and What Goes* worksheet
- *Canine Spay: What Stays and What Goes – Answer Key*

Facilitation Steps:

1. Distribute the *Canine Spay: What Stays and What Goes* worksheet to participants and give them five minutes to complete it.
2. When time is up, break participants into groups of two to four and have them discuss their answers.
3. After about five minutes of discussion, go over the correct answers as a class.

Name: _____ Class: _____

Canine Spay: What Stays and What Goes

Instructions: Using the word bank provided, write the canine female reproductive terms in the appropriate column, indicating whether they are left behind or removed during a spay.

Word Bank:

Ovaries Cervix Uterus Vagina
Fallopian Tubes Ovarian Pedicles Vulva

Left behind during spay **Removed during spay**

--	--

Canine Spay: What Stays and What Goes – Answer Key

Instructions: Using the word bank provided, write the canine female reproductive terms in the appropriate column, indicating whether they are left behind or removed during a spay.

Word Bank:

Ovaries Cervix Uterus Vagina
Fallopian Tube Ovarian Pedicle Vulva

Left behind during spay

Removed during spay

- <u>Cervix</u> - <u>Ovarian Pedicles</u> - <u>Vagina</u> - <u>Vulva</u>	- <u>Ovaries</u> - <u>Fallopian Tubes</u> - <u>Uterus</u>
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Lesson One – Canine Female Reproductive Anatomy

LEARN: Reproductive Parts for Spay

40 minutes

Purpose:

This section will discuss with anatomy of the canine female reproductive tract with focus on structure and function. Participants will learn what parts are removed during a spay and why.

Materials:

- *Reproductive Parts for Spay Note Guide*
- *Canine Female Reproductive Anatomy* slide presentation.

Facilitation Steps:

1. Distribute the *Reproductive Parts for Spay Note Guide*. This is for participants to take their own notes during the presentation. It is not a graded assignment.
2. Walk participants through each slide. Additional notes to share for each slide are found below.
3. Encourage participants to take notes as there will be an assessment to follow.

Slide 1: Canine Female Reproductive Anatomy

Slide 2-5: Reproductive Anatomy

Show participants the lateral and VD diagrams. For routine ovariohysterectomy, both ovaries and the uterus are completely removed.

Although shown on this diagram, the fallopian tube is very small and wraps closely around the ovary. It is not directly identified or of importance during a spay but is removed with the ovary.

The diagram on Slide 4 will be used throughout this presentation and is the same as the review worksheet.

Slide 6-8: Ovaries

If spayed during heat, the ovaries may contain cysts. It is best not to spay during heat as the sudden lack of hormones can confuse the dog's

system. It is best to wait until after the estrous cycle has finished.

The picture shows the ovaries after the ovarian bursa has been cut open.

The main functions of the ovaries are to produce eggs and hormones.

Slide 9-11: Ovarian Pedicle

The ovarian pedicle is double ligated to tie off the ovarian arteries.

These pictures show an adult pedicle on the left and a juvenile pedicle on the right. Notice there is more fatty tissue, and it is more challenging to visualize the blood vessels in the adult.

Slide 12-13: Suspensory Ligament

This band of tissue can be challenging to visualize, especially in adult dogs. It is typically identified and broken down by feel alone. It is palpated as a tight band of fibrous tissue at the cranial aspect of the ovarian pedicle.

Slide 13 shows a juvenile pedicle where the suspensory ligament is easily visualized after being broken down.

Slide 14-16: Uterus

The canine uterus is bicornuate. It has two longer horns that come together at a shorter body.

The picture on Slide 15 is an adult dog uterus. This dog was spayed during estrus, leading to engorged reproductive tissue and vessels that bled more during surgery.

Slide 17-20: Broad Ligament and Uterine Arteries

This connective tissue attaches to the lateral aspect of the uterine horns and body on both sides. It houses several blood vessels, the biggest of which is the uterine artery that runs parallel to each horn. This vessel always requires ligation and is double ligated with the uterine body. In adult dogs (slide 18), the broad ligament itself may require ligation to control bleeding.

Slide 21-22: Cervix

The cervix can either be removed or left behind during a spay, but if left behind, the uterine body is removed all the way up to it.

Slide 23: Vagina

The vagina is a muscular tube for the purpose of birth and mating. It is not directly visualized during a spay and is always left behind.

Slide 24: Why Spay?

The biggest reason is for population control and to prevent pregnancy. Many owners also do not appreciate having to deal with the biannual estrus cycles that most female canines experience. This often comes with a messy bloody vaginal discharge as well as a change in behavior. Dogs may be more vocal and try to escape the house or yard in attempt to mate.

There is an increased risk of mammary cancer in intact females due to hormonal influence. The risk increases with each heat cycle. Dogs who are spayed before their first heat cycles have an extremely low incidence of mammary cancer.

Uterine infections are also common in intact females. The medical term for this is pyometra. A patient with a pyometra requires an emergency spay to remove the source of infection. If not caught in time, this can be fatal.

Slide 25: Diagram Review

Put this slide up on the board while participants complete the REVIEW activity that follows.

Name: _____

Class: _____

Reproductive Parts for Spay Note Guide

1. Ovaries
2. Ovarian Pedicle
3. Suspensory Ligament
4. Uterus
5. Broad Ligament and Uterine Artery
6. Cervix
7. Vagina
8. Reasons for Spay

Lesson One – Canine Female Reproductive Anatomy

REVIEW: Reproductive Anatomy Diagram

10 minutes

Purpose:

Participants work individually to label a diagram of the canine female reproductive tract for review.

Materials:

- *Reproductive Anatomy Diagram* worksheet
- *Reproductive Anatomy Diagram – Answer Key*
- *Canine Female Reproductive Anatomy* slide presentation

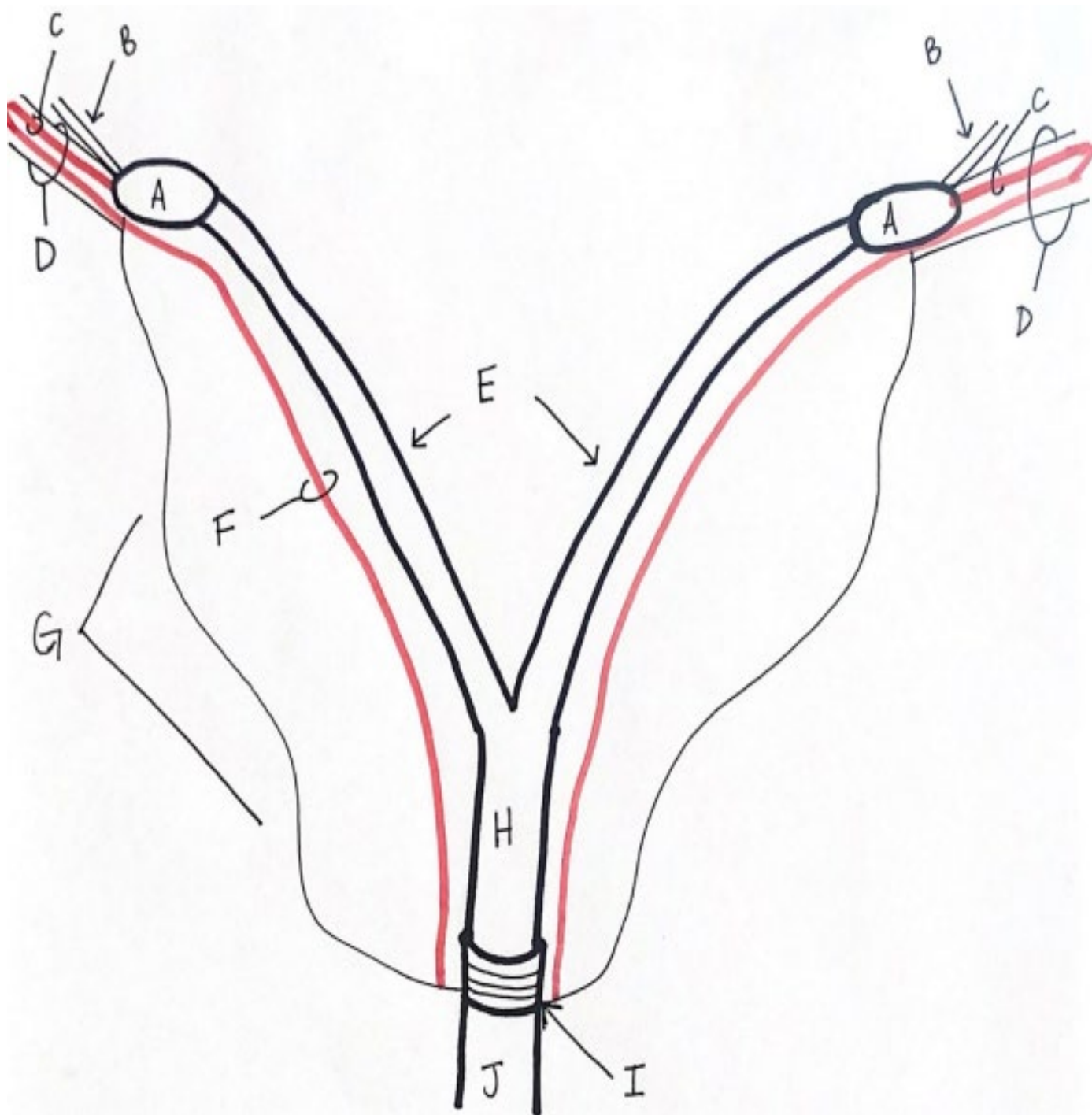
Facilitation Steps:

1. Distribute the *Reproductive Anatomy Diagram* worksheet.
2. Give participants five minutes to label each lettered structure on the diagram on their own.
3. Give participants an additional five minutes to work together and compare answers.
4. Use Slide 25 of the *Canine Female Reproductive Anatomy* slide presentation to review the correct answers.

Name: _____ Class: _____

Reproductive Anatomy Diagram

Instructions: Label each of the lettered parts of the female canine anatomy.



Reproductive Anatomy Diagram – Answer Key

A. Ovary

B. Suspensory Ligament

C. Ovarian Artery

D. Ovarian Pedicle

E. Uterine Horn

F. Uterine Artery

G. Broad Ligament

H. Uterine Body

I. Cervix

J. Vagina

Name: _____ Class: _____

Canine Female Reproductive Anatomy Quiz

Instructions: Select or write in the correct answers to the questions below.

1. What is removed during a routine canine spay?
 - a. Ovaries, uterus, and vagina
 - b. Ovaries and uterus
 - c. Ovarian pedicles and uterine body
 - d. Uterus only
2. Which ligament holds the uterus in place within the abdominal cavity?
 - a. Broad ligament
 - b. Suspensory ligament
 - c. Ovarian ligament
 - d. Uterine ligament
3. True or False: It is ideal to spay a dog while they are in heat.
4. What are the two major vessels that must be ligated during a spay?
 - a. Ovarian artery and cervical artery
 - b. Uterine artery and broad artery
 - c. Suspensory artery and broad artery
 - d. Ovarian artery and uterine artery
5. True or False: Spaying reduces the risk of mammary cancer.
6. Dogs have a _____ uterus.
 - a. Bipartite
 - b. Duplex
 - c. Bicornuate
 - d. Bimorphic
7. Which of the following is **NOT** a reason why spaying is recommended?
 - a. Decreased risk of mammary cancer
 - b. Helps maintain healthy weight
 - c. Remove risk of pyometra
 - d. Control overpopulation
8. Once fertilized, the egg implants in the _____.
 - a. Ovary
 - b. Cervix
 - c. Uterus
 - d. Fallopian tube
9. The two main functions of the ovaries are to produce _____ and _____.

10. What structure sits between the uterus and the vagina?

Canine Female Reproductive Anatomy Quiz

– Answer Key

Instructions: Select the correct multiple-choice answers and fill in the blank.

1. What is removed during a routine canine spay?
 - a. Ovaries, uterus, and vagina
 - b. Ovaries and uterus**
 - c. Ovarian pedicles and uterine body
 - d. Uterus only
2. Which ligament holds the uterus in place within the abdominal cavity?
 - a. Broad ligament**
 - b. Suspensory ligament
 - c. Ovarian ligament
 - d. Uterine ligament
3. True or **False**: It is ideal to spay a dog while they are in heat.
4. What are the two major vessels that must be ligated during a spay?
 - a. Ovarian artery and cervical artery
 - b. Uterine artery and broad artery
 - c. suspensory artery and broad artery
 - d. Ovarian artery and uterine artery**
5. **True** or False: Spaying reduces the risk of mammary cancer.
6. Dogs have a ____ uterus.
 - a. Bipartite
 - b. Duplex
 - c. Bicornuate**
 - d. Bimorphic
7. Which of the following is **NOT** a reason why spaying is recommended.
 - a. Decreased risk of mammary cancer
 - b. Help maintain healthy weight**
 - c. Remove risk of pyometra
 - d. Control overpopulation
8. Once fertilized, the egg implants in the ____?
 - a. Ovary
 - b. Cervix
 - c. Uterus**
 - d. Fallopian Tube

Canine Spay Curriculum

9. The two main functions of the ovaries are to produce **hormones** and **eggs**.
10. What structure sits between the uterus and the vagina?

Cervix

Lesson Two – How to Spay a Dog

Lesson Overview

Participants will be shown step by step with real images how to spay a dog from start to finish.

Lesson Objectives

After completing this lesson, participants will be able to:

- Be familiar with materials used during spay as well as rationale behind selection
- Know the steps of a canine spay from start to finish
- Understand common complications of the canine spay

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• <i>Canine Spay: Test Your Knowledge</i> worksheet • <i>Canine Spay: Test Your Knowledge – Answer Key</i>	1. Print/photocopy the <i>Canine Spay: Test Your Knowledge</i> worksheet in color (one per participant).	10 minutes
LEARN	• <i>Canine Spay Note Guide</i> • <i>How to Spay a Dog</i> slide presentation	1. Print/photocopy the <i>Canine Spay Note Guide</i> (one per participant). 2. Prepare the <i>How to Spay a Dog</i> slide presentation for viewing.	30 minutes
REVIEW	• Surgical materials: #10 scalpel blades, drapes, gauze, suture • Canine Spay Simulation Kit • Gowns and gloves of various sizes • Surgical instruments: towel clamps, scalpel handle, tissue forceps, Metzenbaums, Spay hook, hemostats, needle drivers	1. Have enough of each of the listed materials for all participants to practice gowning and gloving, scalpel blade placement and removal, and performing a spay with the simulator.	50 minutes

Lesson Two – How to Spay a Dog

FOCUS: Test Your Knowledge

10 minutes

Purpose:

Participants individually complete a self-assessment, testing their knowledge of where ligations and transections are performed during a canine spay.

Materials:

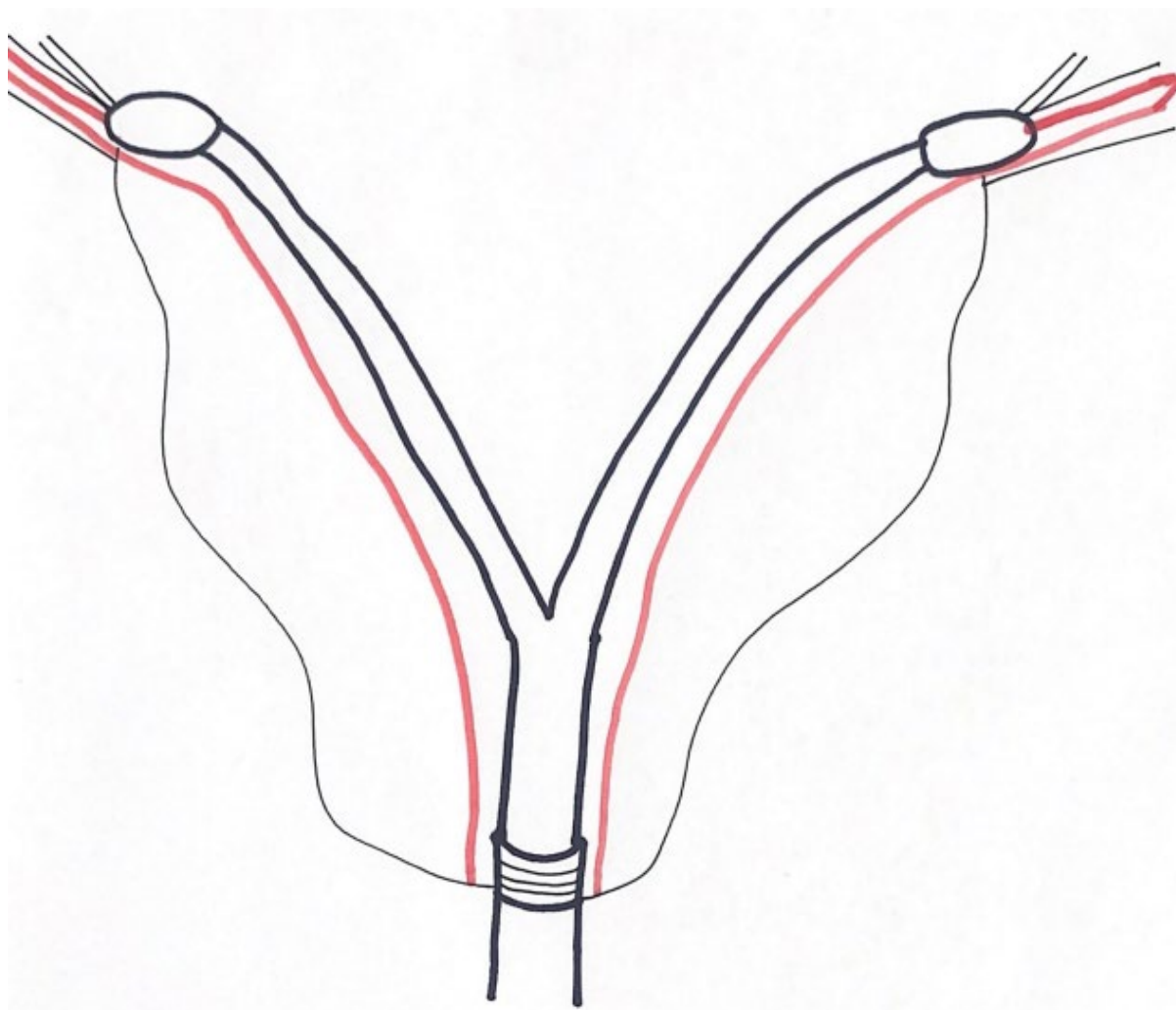
- *Canine Spay: Test Your Knowledge* worksheet
- *Canine Spay: Test Your Knowledge – Answer Key*

Facilitation Steps:

1. Distribute the worksheet with the diagram of the female reproductive anatomy.
2. Set a timer for three minutes, then have participants complete the worksheet showing where they think the reproductive tract is ligated and cut during a routine spay.
3. When time is up, break participants into groups of two to four and have them discuss their answers.
4. After about five minutes of discussion, go over the correct answers.

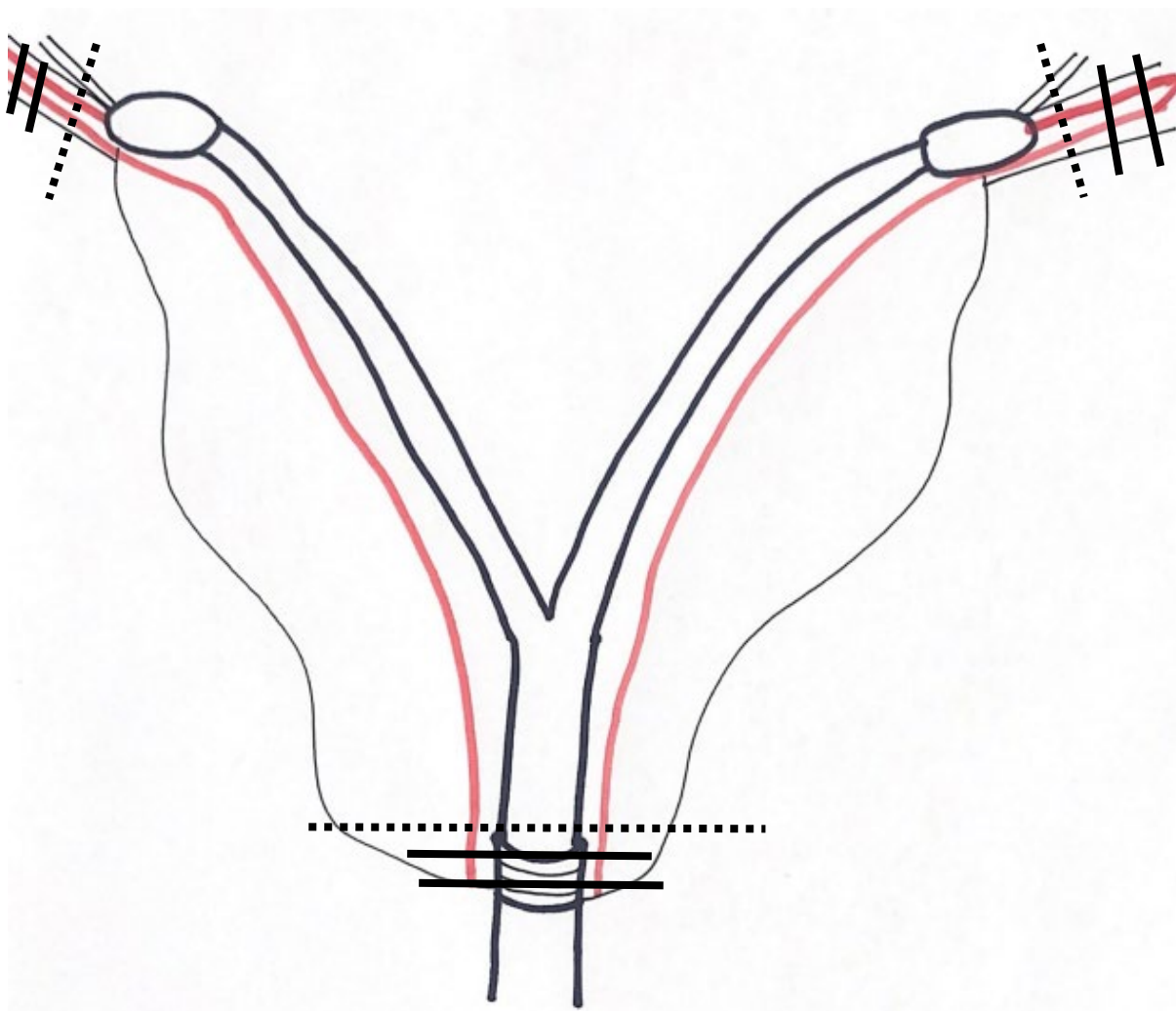
Canine Spay: Test Your Knowledge

Instructions: Using the provided diagram, show where you would expect to ligate and where you would cut during a routine dog spay. Draw a solid line to show where you would place ligations and a dotted line to show where you would cut.



Canine Spay: Test Your Knowledge – Answer Key

Instructions: Using the provided diagram, show where you would expect to ligate and where you would cut during a routine dog spay. Draw a solid line to show where you would place ligations and a dotted line to show where you would cut.



Lesson Two – How to Spay a Dog

LEARN: Canine Spay Steps

30 minutes

Purpose:

This section will use a presentation with images of a spay procedure to walk participants through a spay.

Materials:

- *Canine Spay Note Guide*
- *How to Spay a Dog* slide presentation

Facilitation Steps:

1. Distribute the note guide to participants. This guide is meant for them to use for notes and is not a graded assignment.
2. Walk participants through each slide. Additional notes for each slide are found below.
3. Encourage participants to take notes over each step as there will be an assessment over the information.

Slide 1: How to Spay a Dog

Slide 2: Materials

Discuss how an absorbable suture is used internally and a nonabsorbable suture is used externally. Also, discuss the importance of counting gauze before and after surgery.

Consider having these surgical instruments available for participants to practice handling.

Slide 3: Suture size

Slide 4-6: Surgical Prep

Anesthesia is not covered in this presentation, so steps are starting from patient being anesthetized and in dorsal recumbency.

It is necessary to shave further margins than just where the incision will be to keep the surgery site as sterile as possible and to allow for extension of incision during procedure if necessary.

Discuss how the recommended incision site varies slightly based on the patient's age. The pictures in this presentation are of a 6-month-old puppy.

In adult dogs (A, have had a heat cycle), the suspensory ligaments are tighter and the ovaries harder to exteriorize, but the uterus is larger and stretchy. A more cranial incision allows access.

In young dogs (B, preheat cycle), the suspensory ligament is stretchy, and the ovaries are easy to exteriorize, but the uterus is small. A more caudal incision allows better access.

Discuss that, when scrubbing, you should start centrally and work outward in a spiral motion. Once the fur is touched, the sponge should be discarded.

Slide 7: Surgical Prep

You should thoroughly wash your hands prior to donning a gown and gloves. You should use a closed gloving technique when using a gown. Consider demonstrating this.

The surgeon's dominant hand typically influences the side of the animal they will stand on. A right-handed surgeon will typically stand on the patient's right.

Slide 8: Draping

The drape is sterile, either single use and pre-sterilized or has been autoclaved. Minimize the size of hole cut in drape; it can always be extended if needed.

You can also use four separate drapes on each side of the incision held together with towel clamps.

Slide 9-12: Skin Incision

The incision's location is based on the age of the dog. Show how to properly put a scalpel blade on a scalpel handle and how to remove it using a needle driver.

Subcutaneous fat can be stripped from the linea or cut out completely. Fat should be removed until the shiny pink rectus fascia and linea alba are easily visible.

Slide 13-18: Abdominal Incision

Discuss the importance of pulling the linea up for stab incision to avoid inadvertently hitting underlying organs, like the intestine, bladder, or spleen.

Feel the underside of stab incision to ensure no adhesions are present prior to extending the incision. When extending the incision cranially and caudally, use forceps to protect underlying organs (as pictured).

Slide 19- 21: Finding the Reproductive Tract

The spay hook is used to facilitate finding the uterine horns. Encourage participants to be gentle; if something feels pulled tight, do not continue to pull as a ureter could be caught on the hook. Release the contents and try again. If the intestine is caught on the hook, replace it and try again. The uterine horns should come up with little effort when caught. The size will vary based on patient's age and heat cycle status.

Once the horn is found, walk cranially to find the ovary.

Slide 22-27: Suspensory Ligament

The suspensory ligament is digitally broken to allow better access to the pedicle. This is the most nerve-racking part of learning to spay as it cannot always be as easily visualized as it is in the patient pictured and is often broken down by feel alone. A tight band of tissue is felt at the cranial edge of the pedicle. It takes several spays to become comfortable with how much pressure to apply and where to apply it. Care should be taken not to break any blood vessels within the pedicle. If it is easily visualized, it can also be transected with Metzenbaums or a scalpel.

If you are uncomfortable or having trouble visualizing, consider extending the incision cranially. Slide 26 shows an adult dog pedicle where the suspensory ligament is not as obvious.

Slide 27 shows the adult pedicle after the suspensory ligament has been broken down.

Slide 28-33: Pedicle Ligation

Create a window in the broad ligament. Your aim is to incorporate as little tissue as necessary in your ligation of the pedicle. When making a window, take care to avoid blood vessels.

The pedicle is double clamped. Be sure not to tie ligations too close to the ovary or a clamp at this could result in either incomplete ovary removal or loosening of ligation after clamp release, respectively.

When tying a knot, a complete square knot should be formed. For individual knots or for interrupted suture patterns four throws or two square knots are recommended.

For the start of a continuous suture line, six throws or three square knots are recommended.

Explain how to perform each type of ligation type.

A modified Miller's knot is commonly used for ligation of larger structures, like a pedicle or uterine body (video provided).

A circumferential knot can be used as a second knot for structures like a pedicle or uterine body. It can also be used for single ligation of small blood vessels.

A transfixing knot can be useful as a second knot for large, fatty pedicles or ligation of large uterine arteries in conjunction with the uterine body.

Slide 34-36: Cut and Check the Pedicle

Do not cut too close to the ligatures as this could cause them to slip.

It is essential to remove the entire ovary to avoid complications like continued estrus, stump pyometra, and other conditions negatively influenced by sex hormones.

Opening the ovarian bursa can help ensure complete ovary removal. In the patient pictured,

the ovary is easily visible among surrounding tissue. In larger and overweight patients, this may not be the case.

Prior to releasing the pedicle, it should be examined for bleeding and any ligature slippage. The pedicle should be grabbed with forceps prior to release from the hemostats to allow for observation. Once released, it is challenging to find.

Slide 37-40: Breaking Down the Broad Ligament

It is essential to locate the uterine artery first to make sure it does not break. If it does, it can be ligated. The broad ligament may need to be ligated if it is bleeding excessively. There tends to be more blood vessels in the broad ligament of older dogs or those who have had prior litters (Slide 40).

Breaking down the broad ligament releases the uterine horn to facilitate finding the contralateral horn. This is typically performed with just manual traction and digital breakdown.

Slide 41-42: Repeat on the contralateral ovary

Walk down the first uterine horn towards the uterine body, which will be attached to the contralateral horn. Once located, walk this horn cranially to the contralateral ovary.

If the uterine body cannot be reached, the surgeon may need to extend the incision caudally as this will be necessary to completely remove the uterus.

Before moving on to slide 42, have participants discuss the steps they would take once they locate the ovary. Slide 42 features step-by-step images that will show with each click (break suspensory, make a window in the broad ligament, pedicle ligation, checking the pedicle).

Slide 43-46: Uterine stump ligation

Once the uterine body is located, it is ligated then transected. The uterine body can be ligated with or without being clamped. In dogs who are in estrus, or the uterus otherwise seems friable (some pyometras), clamping should be avoided.

The whole uterus should be removed. To ensure this, ligate just cranial to the cervix.

As with the pedicles, a modified Miller's is the preferred ligature for the uterine body. A transfixing ligature can be used additionally to individually ligate large uterine arteries. After transection, the uterine stump should be observed for bleeding and ligature slippage.

Slide 47-48: Check the Abdominal Cavity for Bleeding.

Mild bleeding is expected even with the most experienced of surgeons. Excessive hemorrhage requires further investigation and ligation of the source.

Gauze rolled over the end of a hemostat can be used to gently probe the areas of both pedicles and towards the uterine stump. If bleeding appears excessive, the incision will need to be extended to locate the source of the bleeding.

If the pedicles and stump are not the source, also check the broad ligament and spleen.

Slide 49-55: Abdominal wall closure

Express the importance of engaging the rectus fascia in abdominal wall closure as it is the holding layer. This is the shiny thin layer over the muscle.

The abdominal wall can be closed in a continuous pattern or an interrupted pattern. The number of throws per knot should be completed accordingly as above.

- 4 throws/2 square knots for interrupted
- 6 throws/3 square knots for continuous

The sides of the abdominal wall should be apposed, but not pulled together too tight as this can cause suture failure or damage to underlying tissue.

Slide 56-60: Subcutis Closure

Start a new continuous suture line engaging the subcutaneous tissues. Avoid going full thickness through the skin on this layer.

It is best to attempt to bury this knot, so it does not poke through the skin. The subcutis is not the holding layer but does help to reduce stress on skin sutures by bringing the skin edges together and closes dead space.

It is beneficial to take a bite of the rectus fascia every two to three passes in an attempt to close dead space and hold the linea and subcutis together.

Slide 61-65: Skin Closure

The skin can be closed in several ways, purely based on surgeon preference.

Fractionous or feral patients may benefit from absorbable intradermal sutures to avoid the need for a second visit to remove sutures.

External skin sutures should be placed so that the skin is apposed only, not pulled tightly.

The images show interrupted cruciate pattern sutures.

Slide 66-67: Complications of Spay

Hemorrhage must be located and addressed prior to closure and discontinuation of anesthesia. If the patient wakes up pale and develops a hemoabdomen, an exploratory may be necessary as a pedicle ligature could have slipped.

Infection can develop if aseptic technique was broken during surgery, or post-operatively if the patient is licking. It is important to educate owners on what to look for so if infection does occur it can be addressed quickly.

Dehiscence can happen to any tissue after any surgery, but avoiding excessive tension, engaging appropriate and healthy tissue, using appropriate suture, and preventing and treating infection early can greatly reduce this risk.

Ovarian remnant occurs when any piece of ovarian tissue is left behind after spaying. If any uterine tissue is left behind, it can be influenced by these leftover hormones, often resulting in a stump pyometra. Surgery is necessary to locate and remove the ovarian tissue +/- remove left behind uterine body.

Name: _____ Class: _____

Canine Spay Note Guide

1. Surgical Prep and Draping
2. Skin Incision
3. Abdominal Incision
4. Find the Reproductive Tract
5. Break Down the Suspensory Ligament
6. Pedicle Ligation

Canine Spay Curriculum

7. Transect and Check the Pedicle
8. Break Down the Broad Ligament
9. Repeat on the Contralateral Ovary
10. Uterine Stump Ligation
11. Check Abdominal Cavity for Bleeding
12. Abdominal Wall Closure

Canine Spay Curriculum

13. Subcutis Closure

14. Skin Closure

15. Complications

Lesson Two – How to Spay a Dog

REVIEW: Practice Makes Perfect

50 minutes

Purpose:

Participants work in groups to practice the steps of a spay using the Canine Spay Simulation Kit. Each participant should get a turn to practice gloving technique, scalpel blade placement off and on the scalpel handle, handling the surgical instruments, and performing the spay procedure with the simulator. Encourage participants to work together.

Materials:

- Surgical materials:
 - #10 surgical blades
 - Drapes
 - Gauze
 - Suture (type does not matter for the purpose of this exercise)
- Canine Spay Simulation Kit
- Gowns and gloves of various sizes (okay to reuse a few pairs of sterile gloves and gowns for purpose of this exercise)
- Surgical instruments:
 - Towel clamps

- Scalpel handle
- Tissue forceps
- Metzenbaums
- Spay hook
- Hemostats
- Needle drivers

Facilitation Steps:

1. Break participants into groups of two to four, depending on class size.
2. Demonstrate how to properly place and remove a scalpel blade from the handle.
3. Demonstrate how to gown and put on surgical gloves aseptically.
4. Demonstrate how to handle/clamp surgical instruments.
5. Have participants use the notes they have taken and their peers to each practice the above three techniques as well as a spay using the Canine Spay Simulation Kit.

Name: _____ Class: _____

How to Spay a Dog Quiz

Instructions: Select or write in the correct answers to the questions below.

1. Which scalpel blade is commonly used for canine spay?
 - a. #11
 - b. #15
 - c. #10
 - d. #12
2. What is the name of the ligament attached to the ovary that is broken down to visualize the pedicle?
 - a. Broad ligament
 - b. Suspensory ligament
 - c. Ovarian ligament
 - d. Uterine ligament
3. What is the holding layer for a routine spay closure?
 - a. External rectus fascia
 - b. Internal oblique muscle
 - c. Subcutis
 - d. Skin
4. Which suture would be appropriate for abdominal wall closure on the spay of a 70-lb dog?
 - a. 3-0 PDS
 - b. 0 Nylon
 - c. 0 PDS
 - d. 2-0 Nylon
5. The _____ is the midline structure of the muscle layer through which a stab incision is made to enter the abdomen.
6. The spay incision is recommended to be more _____ in an adult dog compared to a puppy.
 - a. Cranial
 - b. Caudal
7. At least one of the two knots used to ligate the pedicles and uterine stump should be a _____.
 - a. Transfixing
 - b. Modified Miller's
 - c. Circumferential
 - d. Continuous

8. To best bury your knot on the subcutis closure, the initial bites prior to the first knot should be taken in what order?
 - a. Deep, superficial, deep, superficial
 - b. Superficial, deep, deep, superficial
 - c. Superficial, deep, superficial, deep
 - d. Deep, superficial, superficial, deep
9. When using a continuous suture pattern, both ends should be tied using ____ square knots.
 - a. 4
 - b. 3
 - c. 6
 - d. 2
10. What structure can be cut open to confirm complete removal of the ovary?

How to Spay a Dog Quiz – Answer Key

Instructions: Select or write in the correct answers to the questions below.

1. Which scalpel blade is commonly used for the canine spay?
 - a. #11
 - b. #15
 - c. **#10**
 - d. #12

2. What is the name of the ligament attached to the ovary that is broken down to visualize the pedicle?
 - a. Broad ligament
 - b. **Suspensory ligament**
 - c. Ovarian ligament
 - d. Uterine ligament

3. What is the holding layer for a routine spay closure?
 - a. **External rectus fascia**
 - b. Internal oblique muscle
 - c. Subcutis
 - d. Skin

4. Which suture would be appropriate for abdominal wall closure on the spay of a 70-lb dog?
 - a. 3-0 PDS
 - b. 0 Nylon
 - c. **0 PDS**
 - d. 2-0 Nylon

5. The **linea alba** is the midline structure of the muscle layer through which a stab incision is made to enter the abdomen.

6. The spay incision is recommended to be more _____ in an adult dog compared to a puppy.
 - a. **Cranial**
 - b. Caudal

7. At least one of the two ligatures used on the pedicles and uterine stump should be a _____.
 - a. Transfixing
 - b. **Modified Miller's**
 - c. Circumferential
 - d. Continuous

8. To best bury your knot on the subcutis closure, the initial bites prior to the first knot should be taken in what order?
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 - b. Superficial, deep, deep, superficial
 - c. Superficial, deep, superficial, deep
 - d. **Deep, superficial, superficial, deep**
9. When using a continuous suture pattern, both ends should be tied using ____ square knots.
 - a. 4
 - b. **3**
 - c. 6
 - d. 2
10. What structure can be cut open to confirm complete removal of the ovary?

Ovarian bursa

Sources

1. Fossum, T.W. (2013). Small Animal Surgery Textbook – E-book, Elsevier Health Sciences.
2. Brooks, Wendy (2003, February 7). *Spaying Your Female Dog*. Retrieved from <https://veterinarypartner.vin.com/default.aspx?pid=19239&id=4951464>