

## LABORATORY EXERCISE 46 MAJOR ARTERIES AND VEINS

### Figure Labels

#### FIG. 46.1

- |    |                    |    |                  |
|----|--------------------|----|------------------|
| 1. | Superior vena cava | 4. | Pulmonary veins  |
| 2. | Pulmonary trunk    | 5. | Pulmonary artery |
| 3. | Inferior vena cava | 6. | Aorta            |



### Critical Thinking Application Answer

The left ventricle wall is thicker which provides a more powerful contraction to force the blood through the longer distance of the systemic circuit.

#### FIG. 46.2

- |    |                             |    |                         |
|----|-----------------------------|----|-------------------------|
| 1. | Superficial temporal artery | 6. | Facial artery           |
| 2. | Internal carotid artery     | 7. | Superior thyroid artery |
| 3. | External carotid artery     | 8. | Common carotid artery   |
| 4. | Vertebral artery            | 9. | Brachiocephalic artery  |
| 5. | Subclavian artery           |    |                         |

#### FIG. 46.3

- |    |                      |    |                 |
|----|----------------------|----|-----------------|
| 1. | Subclavian artery    | 4. | Brachial artery |
| 2. | Axillary artery      | 5. | Radial artery   |
| 3. | Deep brachial artery | 6. | Ulnar artery    |

#### FIG. 46.4

- |    |                |    |                            |
|----|----------------|----|----------------------------|
| 1. | Celiac artery  | 5. | Left gastric artery        |
| 2. | Hepatic artery | 6. | Superior mesenteric artery |
| 3. | Renal artery   | 7. | Inferior mesenteric artery |
| 4. | Splenic artery | 8. | Common iliac arteries      |

#### FIG. 46.5

- |    |                           |    |                         |
|----|---------------------------|----|-------------------------|
| 1. | Right common iliac artery | 6. | Femoral artery          |
| 2. | External iliac artery     | 7. | Anterior tibial artery  |
| 3. | Deep femoral artery       | 8. | Posterior tibial artery |
| 4. | Abdominal aorta           | 9. | Dorsalis pedis artery   |
| 5. | Internal iliac artery     |    |                         |

#### FIG. 46.6

- |    |                       |    |                       |
|----|-----------------------|----|-----------------------|
| 1. | External jugular vein | 4. | Internal jugular vein |
| 2. | Vertebral vein        | 5. | Brachiocephalic vein  |
| 3. | Subclavian vein       |    |                       |

**FIG. 46.7**

- |                          |                                |
|--------------------------|--------------------------------|
| 1. External jugular vein | 8. Internal jugular vein       |
| 2. Subclavian vein       | 9. Brachiocephalic vein        |
| 3. Superior vena cava    | 10. Cephalic vein              |
| 4. Axillary vein         | 11. Superior hemiazygos vein   |
| 5. Brachial vein         | 12. Posterior intercostal vein |
| 6. Basilic vein          | 13. Inferior hemiazygos vein   |
| 7. Azygos vein           |                                |

**FIG. 46.8**

- |                               |                        |
|-------------------------------|------------------------|
| 1. Internal jugular vein      | 7. Cephalic vein       |
| 2. External jugular vein      | 8. Basilic vein        |
| 3. Subclavian vein            | 9. Median cubital vein |
| 4. Right brachiocephalic vein | 10. Radial vein        |
| 5. Axillary vein              | 11. Ulnar vein         |
| 6. Brachial vein              |                        |

**FIG. 46.9**

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Hepatic portal vein      | 4. Splenic vein             |
| 2. Superior mesenteric vein | 5. Inferior mesenteric vein |
| 3. Gastric vein (right)     | 6. Inferior vena cava       |

**FIG. 46.10**

- |                        |                         |
|------------------------|-------------------------|
| 1. Common iliac vein   | 6. Great saphenous vein |
| 2. External iliac vein | 7. Popliteal vein       |
| 3. Inferior vena cava  | 8. Anterior tibial vein |
| 4. Internal iliac vein | 9. Dorsalis pedis vein  |
| 5. Femoral vein        |                         |

**Laboratory Report Answers****PART A**

- |      |       |
|------|-------|
| 1. e | 9. i  |
| 2. n | 10. m |
| 3. l | 11. j |
| 4. b | 12. f |
| 5. a | 13. g |
| 6. h | 14. o |
| 7. d | 15. k |
| 8. c |       |

**PART B**

- |                                |                                       |
|--------------------------------|---------------------------------------|
| 1. right subclavian artery     | 6. vertebral artery                   |
| 2. aortic arch                 | 7. facial artery                      |
| 3. superior mesenteric artery  | 8. brachial artery                    |
| 4. inferior mesenteric artery  | 9. external iliac artery              |
| 5. right common carotid artery | 10. left and right pulmonary arteries |

**PART C**

- |    |   |    |   |
|----|---|----|---|
| 1. | a | 5. | h |
| 2. | b | 6. | c |
| 3. | d | 7. | g |
| 4. | e | 8. | f |

**PART D**

- |    |                            |    |                     |
|----|----------------------------|----|---------------------|
| 1. | right brachiocephalic vein | 6. | femoral vein        |
| 2. | popliteal vein             | 7. | hepatic portal vein |
| 3. | common iliac vein          | 8. | pulmonary veins     |
| 4. | basilic vein               | 9. | renal vein          |
| 5. | anterior tibial vein       |    |                     |

**PART E (figure 46.11)**

- |    |                       |     |                     |
|----|-----------------------|-----|---------------------|
| 1. | Common carotid artery | 9.  | Subclavian vein     |
| 2. | Brachiocephalic vein  | 10. | Pulmonary vein      |
| 3. | Superior vena cava    | 11. | Inferior vena cava  |
| 4. | Femoral vein          | 12. | Aorta               |
| 5. | Great saphenous vein  | 13. | Common iliac vein   |
| 6. | Internal jugular vein | 14. | Common iliac artery |
| 7. | External jugular vein | 15. | Femoral artery      |
| 8. | Subclavian artery     |     |                     |

# LABORATORY EXERCISE 47

## CAT DISSECTION: CARDIOVASCULAR SYSTEM

### Laboratory Report Answers

#### **PART A**

1. The parietal pericardium forms a relatively thick, tough sac that encloses the heart. It is attached to the large blood vessels at the base of the heart and to the diaphragm.
2. The walls of the atria are much thinner than those of the ventricles. The wall of the left ventricle is much thicker than that of the right ventricle.
3. Wall thickness is related to the force of its contraction and the amount of pressure it imparts to the blood inside a heart chamber. The left ventricle has the thickest wall, contracts with the greatest force, and creates the greatest amount of blood pressure in the heart chambers. The left ventricle is the pump for the systemic circuit.
4. In the human, the right common carotid artery branches from the brachiocephalic artery, whereas the left common carotid artery comes directly from the aortic arch. In the cat, both common carotid arteries branch from the brachiocephalic artery.
5. In the human, the aorta divides to form the two common iliac arteries, which in turn give rise to external and internal iliac arteries. In the cat, the aorta divides to form the external iliac arteries, and the internal iliac arteries branch from the aorta independently.

#### **PART B**

1. In the human, the brachiocephalic vein is formed by the union of the internal jugular and the subclavian vein on each side. In the cat, the brachiocephalic vein is formed by the union of the external jugular and the subclavian vein on each side.
2. In the human, the internal jugular vein is somewhat larger than the external jugular vein. In the cat, the external jugular vein is larger.
3. Answers will vary.