

# Equine Ovarian Teratoma

## A Case Report

by Robert Abraham\*

According to Roberts,<sup>6</sup> tumors of the genital tract of the mare are a rare occurrence. Dimock and Edwards<sup>1</sup> reported only six genital tumors in the examination of 2,000 mares. Of these tumors only three were found in the ovary, and none of these were teratomas. Moulton<sup>5</sup> states that of all the domestic animal species the horse seems the most prone towards having teratomas, however, they are usually found in the young cryptorchid stallion. Jubb and Kennedy<sup>4</sup> make no mention of ovarian teratomas. Whether this lack of information is due to the rarity of such tumors in the ovary, or is due to a lack of research is a matter of question.

### HISTORY

On May 12, 1967, a 10 year old Quarter Horse mare entered Stange Memorial Clinic for a fertility examination. The mare's fertility came under suspicion when she failed to conceive on three breedings to a proven stallion during three successive estrus cycles.

The following history was obtained concerning the mare's reproductive life. The mare had had four parturitions, raising three foals. Her last parturition was in April of 1966; at this time she foaled normally. According to the owner the mare had shown irregular estrus cycles from her last date of parturition until March of 1967. After this the mare seemed to cycle with regularity. During the mare's last

heat cycle, which began on May 1st and lasted approximately 12 days, the local veterinarian examined and treated the mare for a uterine infection. He stated that one ovary was quite large. After this treatment the owner said that the mare "passed off" a lot of material.

### SUBJECT

The mare was in good physical condition except for being overweight. Examination of the external genitalia showed no abnormalities. Rectal palpation of the genital tract revealed the following information. The vagina and uterus were normal. The left ovary was also normal being semi-firm and slightly irregular in outline. Its size was estimated to be 3.75 cm.  $\times$  2.75 cm.  $\times$  2.75 cm. No follicular activity was noted. The right ovary was found to be quite firm, irregular, and rough. Its estimated measurements were 12.0 cm.  $\times$  10.0 cm.  $\times$  10.0 cm. Some areas of the right ovary were extremely firm forming crypts and ridges. Due to the large and abnormally shaped right ovary, the mare was tentatively diagnosed as having a unilateral ovarian tumor.

The mare was then sent home for a period of time to determine if any gross changes would transpire. The owner was also instructed to reduce the mare's weight. It was decided that if no improvement was noted in two months a unilateral ovariectomy would be performed.

On June 16, 1967, the mare was readmitted to the clinic. Her physical condition was about the same as before, and

\* Mr. Abraham is a junior in the College of Veterinary Medicine, Iowa State University.

upon palpation the right ovary was found to be in a similar condition as it had been at the first palpation.

### **SURGERY**

On June 28 1967, surgery was performed on the mare. Induction to anesthesia was by means of 1½ grams of thiamylal sodium.\* Surgical anesthesia was produced by the use of halothane† in a closed circuit system. The mare was placed in dorsal recumbency and the right ventral abdominal area prepared for surgery.

An eight inch skin incision was made just anterior and lateral to the right half of the udder, beginning approximately two inches anterior to the posterior edge of the aponeurosis of the external oblique muscle, and extending forward from this point. The aponeurosis was incised for approximately five inches in the direction of the fascial fibers. The deeper muscles and the peritoneum were penetrated by blunt dissection.

The right ovary was located and exteriorized through the opening in the aponeurosis of the external oblique muscle. The ovarian pedicle was transfixed and triple ligated with U.S.P. #3 chromic catgut. The pedicle was then severed and the ovary removed.

The peritoneum and the deeper muscle layers were closed with four interrupted sutures of chromic U.S.P. #3 catgut. The fascia of the aponeurosis of the external oblique muscle was closed with three interrupted sutures of U.S.P. #3 catgut. The skin was closed with a continuous braided nylon suture. The mare regained her feet approximately 15 minutes after the surgery was completed. Fifteen hundred units of tetanus antitoxin were given intramuscularly.

### **AFTERCARE**

Aftercare was simple and uneventful. The animal was exercised daily at a walk. Serum exuded along the line of incision, but not in any great quantity. The skin sutures were removed on the eighth day.

\* Surital®, Parke Davis and Company, Detroit, Michigan.

† Fluothane®, Ayerst Laboratories, Inc., New York, New York.

Some subcutaneous edema was noted, but receded with exercise.

### **Postoperative Observations and Recommendations**

Eight days after the surgical procedure, the mare showed signs of estrus and interest in the teaser stallion. Rectal palpation of the reproductive tract was not performed at this time, except for one palpation to determine if adhesions were present between the organs of the peritoneal cavity and the parietal peritoneum at the sight of the incision. There were no palpable adhesions. The mare was discharged on July 26, 1967, with the recommendation that she not be allowed to become overweight. It was also recommended that she be teased the following breeding season to attempt to determine ovarian activity. Also, a rectal palpation of the reproductive tract was to be done to determine if normal activity was present in the remaining ovary.

### **HISTOPATHOLOGY**

On histological examination of the ovary, diagnosis of a benign ovarian teratoma was made. The predominant tissue found was cartilage and connective tissue stroma. Large cystic spaces were present lined by stratified squamous epithelium. These spaces were filled with hair.

### **DISCUSSION**

A unilateral ovariectomy was performed for a two-fold reason. First, the tumorous ovary was removed to prevent the possibility of metastasis to other organs had the tumor been malignant. Secondly, it was removed on the assumption that its removal might help correct the infertility problem. Any correlation between the ovarian teratoma and infertility in the equine is strictly theoretical. Present-day research in domestic animals is not adequate to arrive at any conclusions. In humans,<sup>2</sup> researchers have found no correlation between teratomas and female infertility.

Continued next page

## ACKNOWLEDGEMENTS

The author wishes to thank Drs. Adams, Clark, and Lundvall of the Iowa State University Veterinary Staff for their help in writing this paper.

## BIBLIOGRAPHY

1. Dimock, W. W., and Edwards, P. R., *The Pathology and Bacteriology of the Reproductive Organs of Mares in Relation to Sterility*, Ken. Agr. Exp. Stat., Res. Bull., pp. 286, 1928.
2. Dockert, Malcom B., Malkasian, George D., and Symmonds, Richard E., Malignant ovarian teratomas, *Obst. and Gynec.*, 25: 810-814, 1965.
3. Frank, E. R., *Veterinary Surgery*, Burgess Publishing Company, pp. 95-96, 1965.
4. Jubb, K.V.F., and Kennedy, P.C., *Pathology of Domestic Animals*, Academic Press, New York, New York, 1963.
5. Moulton, J. E., *Tumors in Domestic Animals*, University of California Press, Berkely, California, pp. 89-92, 1961.
6. Roberts, S. J., *Veterinary Obstetrics and Genital Diseases*, Published by the author, Ithaca, New York, 1956.

# Clinical Quiz

by Jerry Swan and Steve Wightman\*

### Case #1:

You are about to close up a little early for a few rounds of golf when the phone rings. It is Mr. Thomas, an obese man with a Laborador of similar stature. Mr. Thomas relates that he went in the yard to get his dog only to find him laying on the ground as if injured. You tell him to bring the dog to your hospital right away. When your attendant lifts the dog onto the examination table, the dog yelps as if in extreme pain. Your physical examination reveals abdominal splinting and evidence of shock but no signs of external trauma. At this point you make a tentative diagnosis, start treatment, and call for some lab work to back you up.  
Your tentative diagnosis is \_\_\_\_\_

Additional diagnostic tests \_\_\_\_\_  
Your immediate treatment is \_\_\_\_\_

### Case #2:

An eleven month old Scottie is brought into your clinic accompanied by the owner, his wife, her sister, the owner's three young children, and two neighbor children. The complaint is that the dog has been vomiting for two days and had diarrhea the preceding night. The color of the vomitus is described as "a pretty shade of green" by the owner's wife. The dog's appetite has remained good. The only sign

noted on physical examination was a slight dehydration. There was no pain upon abdominal palpation. Radiographs and blood work revealed no abnormalities. At that point you have an idea what the problem might be and you confirm your diagnosis by further examining the dog's history.  
Your diagnosis is \_\_\_\_\_  
Your treatment is \_\_\_\_\_

### Case #3:

A lady of obvious wealth presents you with her fancy show poodle. She is convinced the dog is pregnant and is quite upset because she is sure that the neighborhood tramp is the man of the hour. She gives you the following history: the dog was in heat six weeks ago and now is showing polyphagia, diarrhea, "nest making," and self nursing. Upon physical examination you note abdominal distention, relaxation of the vulva, temperature of 99.7°, enlarged mammary glands, and general hyperexcitability. After abdominal palpation you are far less concerned than the owner but she is hard to convince. You take a radiograph to confirm your diagnosis. The owner breathes a sigh of relief when you interpret your findings.  
Your diagnosis is \_\_\_\_\_  
Your treatment is \_\_\_\_\_

### Case #4:

An eight year old male dog of questionable parentage is presented to your clinic

\* Mr. Swan and Mr. Wightman are juniors in the College of Veterinary Medicine, Iowa State University.