IRANIAN JOURNAL OF VETERINARY SURGERY (IJVS)
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Clinical Report

A Clinical Report of Hiatal Hernia in an Osteoporotic Animal

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Abstract

Case Description- A five-month-old male domesticated short hair cat with non-specific signs, weakness, coughing and dyspnea was referred to the clinic.
Clinical Findings- The patient was primarily diagnosed with kyphoscoliosis induced by severe nutritional osteoporosis. After couple of days the case was referred in worse condition. Contrast radiographs revealed esophageal hiatal hernia.
Treatment and Outcome- Surgery was successfully performed to reduce the size of the esophageal hiatus, esophagopexy and left fundic gastropexy. The case returned to a normal condition after a week. A two year follow up showed no recurrence.
Clinical Relevance- It is concluded that kyphoscoliosis caused by severe nutritional osteoporosis could be a predisposing factor for hiatal hernia in small animals.
Key words: Hiatal Hernia, Nutritional-Small Animal, Osteoporosis, Kyphoscoliosis.

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Introduction

Hiatal hernia is protrusion of abdominal esophagus, gastroesophageal junction and even sometimes a proximal portion of the gastric fundus through the esophageal hiatus in diaphragm into the caudal mediastinum. This condition causes cranial movement of the abdominal esophagus and stomach. Gastroesophageal reflux and subsequent esophagitis are responsible for clinical signs1. Nutritional imbalances frequently occur in animals without special considerations on their diet. Subsequent diseases followed by primary nutritional imbalance can make the condition too complicated to the veterinarian.

Case Description

A five month old male domesticated short hair cat, was referred to the clinic. No specific sign was mentioned by the owner except weakness, discomfort of the patient, coughing and dyspnea. In physical exam abnormal movement and even ataxia was noticed during normal walking of the animal. Respiratory distress was also observed. Severe concurrent nutritional osteoporosis and kyphoscoliosis was primarily diagnosed in plain radiographs (Fig. 1). Routine osteoporosis treatment was started. Two days later the patient referred to the clinic due to repeated vomiting and significant dilation of the abdomen. Contrast radiography was suggested due to megaesophagus and apparent strip sign. Combination of sliding and paraesophageal hiatal hernia was diagnosed in contrast radiographs (Fig. 2).

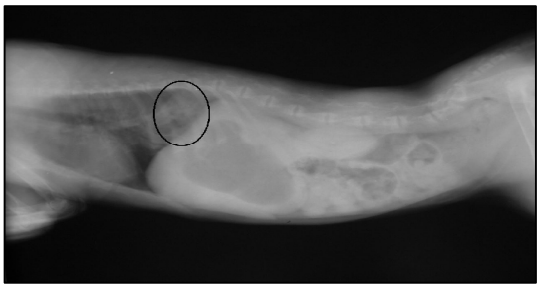

Figure 1. Severe nutritional osteoprosis plus kyphoscoliosis diagnosed in a plain radiograph. Note a soft tissue mass above esophagus.

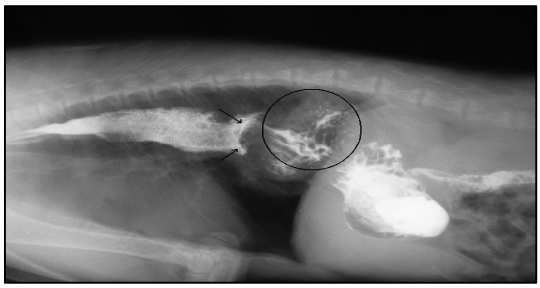

Figure 2. Esophageal dilation with rugal folds and a soft tissue mass beside esophagus that is diagnosed as combined sliding and paraesophageal hiatal hernia in positive contrast radiograph

Treatment and Outcome

After primary stabilization of the patient's physical status and aseptic preparation the surgery was performed. Under general anesthesia and thorough cranial ventral midline incision abdominal organs were first observed carefully for any evidence of adhesion or strangulation. The hernia was first reduced by repositioning the stomach in its normal position and then 360 degree esophagopexy and reduction of esophageal hiatus was performed by 3-0 polyglyconate. Left fundus incisional gastropexy also performed in the right wall of the abdomen in simple continuous pattern. The abdomen was closed in a routine 3-layer manner and case was recovered without any complication. Post-operative care included nutritional support, esophagitis treatment and intensive monitoring for any signs of nausea, vomiting, or aspiration pneumonia was done. The patient returned to a normal diet and controlled for any signs of regurgitation. In two years follow up no recurrence of signs was reported.

Discussion

The surgical technique used in this patient was the one described by White in 19931. Left fundic gastropexy prevents recurrence of signs and hernia in treated patients. Retrospective study of 16 dogs and cats diagnosed with hiatal hernia showed that it is usually an accidental finding in radiographs without a specific symptom or even asymptomatic2. Although laparoscopic repair of hiatal hernia have been introduced as an alternative to the conventional open surgery treatment it is not widely accepted and still remains controversial3, 4, 5. Even The use of synthetic patches in repair of hiatal hernia was preferred over simple esophagopexy for large hiatal hernia which are prone to re-herniation. The patch is effective in prevention of recurrence6.

Esophagitis is probably a significant sign that causes regurgitation in patients with hiatal hernia and in those with recurrent type. Esophagitis found to have close association with hiatal hernia7, 8. Furukawa in 1999 reported that the age-related proportion of esophagitis increased in aged people. Increased body mass index partly due to decreased height caused by osteoporosis, and/or hiatal herniation, were related to the higher incidence of esophagitis in females aged over 70 9. Reports are available for concurrent kyphoscoliosis and hiatal hernia and esophagitis. More reports are from aged people who suffered from osteoporosis10, 11, 12. Picciocchi described that the pathogenetic relationship is existed between axial deviation of spinal column and hiatal hernia13. The presence and severity of vertebral fractures in human are associated with the presence of hiatal hernia. This suggests that kyphosis induced by multiple vertebral fractures might predispose osteoporotic patients to hiatal hernia14. Yushimora in 2008 definitely indicated the significantly associated of vertebral fractures with the presence of hiatal hernia15. All these evidences highlight the strong relationship between abnormalities of vertebral column and hiatal hernia. Abnormal curvature of the vertebral column, called kyphoscoliosis, causes increased abdominal pressure in small animals, especially in cats be-cause of their dorsoventrally compressed shape of their thorax. This leads to increase pressure over diaphragm specially after a heavy meal and subsequent dilation of stomach. The gradual increase in intra-abdominal pressure can consequently induce hiatal hernia.

It is concluded that kyphoscoliosis caused by severe nutritional osteoporosis could be a predisposing factor for hiatal hernia. Special consideration should be taken over consequent hiatal hernia caused by osteoporosis since nutritional imbalance is a frequently problem occurred in pets in many countries.

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چکیده

گزارش بالینی یک مورد فتق هیاتال ناشی از استئوپروزیس تغذیه ای

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توصیف بیمار- گربه پنج ماهه از نژاد مو کوتاه بومی با علائم نا مشخص، ضعف، سرفه و تنگی نفس به کلینیک ارجاع داده شد.
یافته های بالینی- کایفواسکولیوزیس منتج از استئوپروزیس شدید تغذیه ای به صورت اولیه در بیمار تشخیص داده شد. پس از گذشت چند روز وضع بیمار رو به وخامت گذاشت. در رادیوگرافی با ماده ی حاجب فتق هیاتال تشخیص داده شد.
درمان و نتیجه آن- در جراحی ابتدا اندازه ی هیاتوس مری کاهش داده شد. سپس ازوفاگوپکسی و گاستروپکسی در سمت چپ در محل فاندوس معده انجام شد. بیمار پس از یک هفته به شرایط طبیعی بازگشت. در پیگیری پس از دو سال علائمی دال بر عود بیماری دیده نشد.
کاربرد بالینی- کایفواسکولیوزیس ناشی از استئوپروزیس تغذیه ای شدید که موجب افزایش فشار داخل شکمی می شود می تواند به عنوان یک فاکتور مستعد کننده برای فتق هیاتال در دام های کوچک قلمداد می شود.
کلید واژگان- فتق هیاتال، استئوپروزیس تغذیه ای، کایفواسکولیوزیس.