دراسة عن جراحة ازالة الحوصلة المرارية فى الكلاب

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ملخص

تم ازالة الحوصلة المرارية لعدد اثنى عشر كلبا سليما اكلينيكيا هذا وقد لوحظ أن الكلاب التى أجريت عليها العملية قد تحملت بدرجات متفاوتة أثر هذه العملية ولم تحدث أية مضاعفات خطيرة بعد اجراء العملية . ولقد أثبت الفحص التشريحى المرضى للكبد أنه قد حدث تضخم فى القناة الصفراوية كتعويض لما حدث بالعملية .

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SURGICAL APPROACH TO CHOLECYSTECTOMY IN DOGS

By

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SUMMARY

1. Experimental cholecystectomy was performed on 12 dogs.
2. The gallbladder was bluntly dissected from liver bed, biligated and removed.
3. Animals withstood fairly well the operation and showed no serious post-operative complications.
4. Patho-anatomical examination showed marked compensatory hypertrophy of the common bile duct as early as 20 days post operation.

INTRODUCTION

Indication for cholecystectomy in the dog appear to be infrequently encountered. However, few cases of cholelithiasis have been reported in dogs. As early as 1902, PARASCONDOLO described an operation for the relief of obstruction of the bile duct in a dog. SCHLOTTHAUER and STALKER (1936) and VOLKMANS (1938) recorded cholelithiasis in the dog. DOSTER and VIRTUE (1942) found gallstone formation in a dog during experimental surgery. SCHLOTTHAUER (1945) observed cholelith formation in two dogs subjected to necropsy. CARTMELL, EDWARDS and HAMMOND (1964) reported a case of obstructive Jaundice in a dog that has been attributed to cholelithiasis. BIERITZ and BRASMER (1966) diagnosed two cases of traumatic rupture of the cystic duct in dogs according to complete history, physical examination, laboratory tests, radiography and exploratory laparotomy.

Review of the available literature leads to a suggestion that cholelithiasis in dogs may occur more commonly than is generally believed. The present work is an attempt for a simple technique for cholecystectomy in that species.

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MATERIALS AND METHODS

The present investigation was carried out on 12 clinically healthy dogs of different age, sex and body weight. The animals were put under clinical observation before and after operation. The temperature, pulse and respiratory rates were recorded daily. Appetite, defecation, urination general behaviour were also recorded.

SURGICAL ANATOMY :

The liver of the dog is situated in the intrathoracic part of the abdominal cavity almost centrally lying against the diaphragm and under cover of the ribs. A large part of the liver projects ventrally beyond the right costal arch (EL-HAGRI, 1967). The excretory apparatus of the liver commonly comprises : the common hepatic duct, the gallbladder, the cystic duct and the common bile duct. The gall bladder in the dog adheres closely to the depression on the visceral surface of the liver between the right medial and the quadrate lobes. It is not visible until these previous lobes are drawn apart. The gallbladder is a slate-blue, pear-shaped sac and consists of fundus, body and neck. The fundus has expanded, round ventral end. The body is directed dorsally, and is usually in contact with the pyloric part of the stomach. It is continued by a narrow dorsal part or neck, which is continued, in turn, by the cystic duct. The latter extends from the neck of the gallbladder to its junction with the first hepatic duct.

The cystic artery, which supplies blood to the gallbladder, originates from the left branch of the proper hepatic artery. When the gallbladder is fully distended, it touches the diaphragm (MILLER, 1965).

SURGICAL PROCEDURE :

The animals were kept without food for 24 hours prior to operation. They were injected I.M. with chlorpromazine as a preanesthetic medication at a dose rate of 0.05 ml/kg. b. wt. General anaethesia was induced by I.V. injection of Pentothal sodium in a dose of 20 mg/kg. b. wt. The animals were placed in the dorsal position with the front part of the body raised to produce a caudal retraction of the intestine and thus facilitate an abdominal approach to the gallbladder (EL-AMROUSI, EL-GINDI, MONZALY and MOTTILB, 1971).

The laparotomy incision was crescentic, 15 cm. long and cited paracostally on the right side parallel, and 1 cm. caudal, to the last rib. The superficial and deep epigastric vessels were secured and severed. The gallbladder was bluntly enoculeated and cleared apart from the liver bed. Two ligatures were applid on the neck of the gallbladder using chromic catgut (O), and by cutting inbetween, the gallblodder was removed. Haemorrhage from the liver although slight, yet it was easily controlled. The abdominal wound was closed in the usual manner. Before closer, terramycin was infiltrated into the operation site, and terramycin skin ointment was applied to the sutured wound, that was covered by a piece of sterile gause thereafter. Animals were given parenteral antibiotics for three days.

The experimental animals were followed up for 20, 30, 45 and 60 days then sacrified for Pathological Examination.

RESULTS AND DISCUSSION

All presented dogs withstood well the surgical intervention and manifested no postoperative complications during the course of the experiment which lasted, for 60 days. Neither clinical side effects nor general metabolic disorders have been encountered.

Primary intention healing has been achieved in all the experimental animals within 10 days.

Veterinary literature lacks informations on the method of cholecystectomy in any of the domesticated animals. However, as early as 1917, JADD and MANN ; and MAYO had reported on the effect of, and the merits of cholescystectomy, respectively, in human surgery. ROSENTAL and KIIPINS (1971) described a comparison of thoracic and abdominal approaches for cholecystectomy in the dog. They concluded that the thoracic approach seemed pereferable as it provided greater access to the gallbladder and facilitated manipulation. SCOTT, HOFFER, AMAND and ROENIGK (1973), and SCHALL, CHAPMAN, FINCO, MATHER, ROSIN and WELSER (1973) reported on some cases of cholelithiasis in dogs.

On the basis of the present study, some advantages and disadvantages are apparent in the abdominal approach. It offers the advantage of permitting the use of the familiar abdominal closure. Although the gallbladder is less well exposed that predisposes the liver bed and surrounding viscera to the risk of traumatization, yet the abdominal approach appears to be pere-

ferable. It is not hampered by the disadvantages of the thoracic procedure, as the latter requires respiratory assistance as well as re-establishment of the negative intrathoracic pressure.

An interesting phenomenon observed in the study was an extremely early (20 days post operation), compansatory hypertrophy of the common bile duct. The ducts were patent and no adhesions occurred in any of the dogs.

Following the operation up to 30, 45 and 60 days marked dilatation of the common bile duct was seen in the investigated dogs. After 60 days the diameter of the ducts equaled that of the duodenum's into which they fed and tremendous vascularisation of the ducts was also observed.

JUDD and MANN (1917), in an experimental study on the effect of cholecystectomy in the dog, recorded that the extrahepatic ducts were found to be dilated 60 to 90 days after operation. This enlargement was attributed to the fact that the sphincter of ODDI at the entrance of the duodenum withstands only slight pressure before it constricts ; or otherwise due to compensation phenomena. This together with the continuous production of the bile by the liver, force the common bile duct to enlarge.

ILLINGWORTH and DUCK (1968) stated that following cholcystectomy the common bile duct dialates and the flow of bile no longer dependent upon gallbladder contraction, becomes more sluggish. Despite the common observation that chollecystectomy causes little or no digestive disturbances, there can be no doubt that the gallbladder is by no means functionless.

Some investigators held the opinion that post-cholecystectomy enlargement of the bile ducts is only temporary and, that by gradually overcomming the sphincter's pressure at the duodenum, the ducts return to normal within 2 or 3 months (JUDD and MANN, 1917 ; and MAYO, 1917).

As the present study imposes mainly on the surgical technique, yet an accurate follow up have not been traced. It is hoped that this study on the technique of cholecystectomy in dogs can serve as a good basis for further investigation in the field of experimental human surgery. However, further studies on haematological, bio — and histochemical investigations in postoperative care of cholecystectomized dogs are needed.

Logical approaches to the dissolution of cholelithiasis in man probably are not applicable to the dog because of species differences in the composition of bile and choleliths (MILLAR and HUBBARD, 1946). Surgical diferrences

also exist. In contrast to man, cholecystectomy in dogs is consistently followed by significant choledocal dilatation (WAKIM and MAHOUR, 1971). For this reason, cholecystotomy may be preferred to cholecystectomy for removal of choleliths from dogs.

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