

# Gastric Perforation Following Dog Bite in a Child

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## Abstract

### Keywords

- gastric perforation
- dog bite
- pediatric gastric perforation

Dog bite in children leading to visceral injury is a very uncommon clinical scenario. We treated a 6-year-old child who had a history of dog bite over the abdomen. At laparotomy, one perforation was found on the anterior surface of the stomach. The perforations were repaired primarily. The child made an uneventful postoperative recovery.

## Introduction

Dog bite injury in children is a preventable problem; however, it continues to occur. Dog bite injuries are common in children.<sup>1</sup> Children in the age group of 4 to 7 years are most vulnerable because this age group is most likely to grab and hold an animal and elicit a response.<sup>2</sup> We treated a 6-year-old boy who presented with gastric perforation due to dog bite injury. Being an extremely uncommon entity, it is being presented with a review of the relevant literature.

## Case Report

A 6-year-old boy presented with abdominal distention and bilious vomiting for one day. He suffered bite over the abdomen by a stray dog approximately 30 hours ago. The child was taken to the local district hospital, where local wound cleansing was performed. The patient was administered antirabies prophylaxis and tetanus toxoids. When the patient developed abdomen distension and bilious vomiting, he was referred to our institute.

On examination, the boy was irritable, apprehensive, and dehydrated. He was having tachypnea, tachycardia, and febrile. There were two penetrating injury marks of the bite over the epigastrium and right hypochondrium, 6 cm apart without any evisceration or oozing of blood or peritoneal fluid (►Fig. 1A). Diffuse abdominal distension was present, bowel sounds were absent, and upper border of liver dullness was obliterated.

Plain X-ray abdomen in erect posture revealed pneumoperitoneum (►Fig. 1B). After initial resuscitation, laparotomy was performed, which revealed single perforation (0.5 × 1.0 cm) on the anterior wall of the stomach (►Fig. 2A). After refreshing the margins, the perforation was closed in two layers (►Fig. 2B). Postoperative period was uneventful, and the patient was discharged in satisfactory condition on the seventh postoperative day. The patient was followed for 3 months. There was no complaint during this period.

## Discussion

The annual estimated number of dog bites in India is 17.4 million.<sup>3</sup> It comprises a whopping 91.5% of all animal bites. Of these, approximately 60% are strays, which is Indian pariah dog (*Canis lupus familiaris*). The remaining 40% are caused by pet dogs of various species. Pediatric dog bite injuries are common, and severity may vary from superficial wounds to life-threatening injuries. Due to short stature of the pediatric population, dog bite usually occurs in peripheries and the head and neck.<sup>1</sup> The torso reportedly gets injured in less than 10% of cases.<sup>2</sup> Besides, because of their natural behaviors, such as yelling and grabbing, which may frighten or annoy the dogs, children are at high risk of sustaining dog bite injuries.<sup>4</sup> Contrary to the western world, where rearing of dogs is much common, and bites are more common in home settings,<sup>1</sup> most of the bites in India are by stray dogs.<sup>5</sup> The

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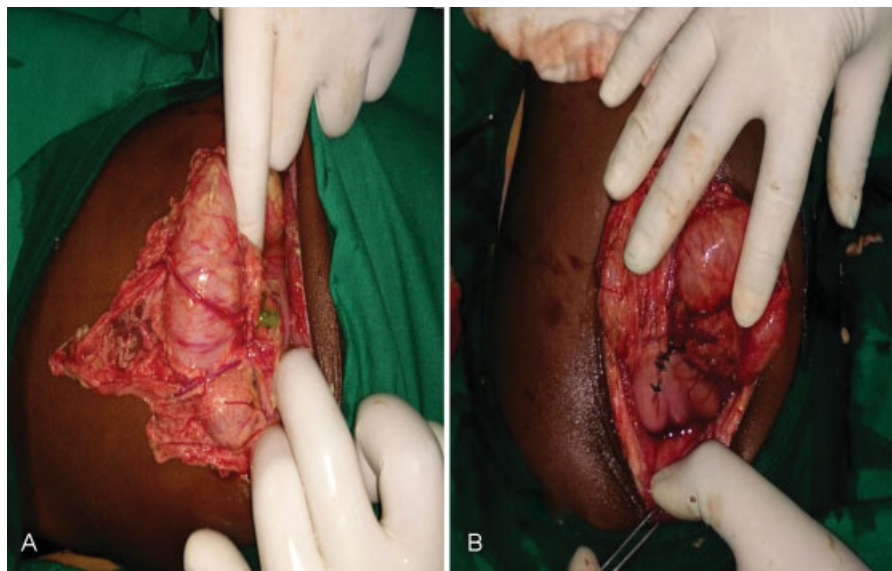
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**Fig. 1** (A) Clinical picture of the patient. There are visible marks over his abdomen, which are marked by circles. (B) X-ray abdomen showing pneumoperitoneum.



**Fig. 2** (A) Intraoperative picture showing gastric perforation. (B) Intraoperative picture after repair of the perforation.

common western breeds of dogs incriminated in bites are Pit bull, Rottweiler, German Shepard, and Siberian Husky.<sup>6</sup>

As discussed above, though dog bite usually occurs in peripheries and the head and neck, there are sporadic reports of visceral injuries. There are reports of bowel evisceration with serosal contusion.<sup>7</sup> There is a report of ileal injury following dog bite.<sup>8</sup> Dog bite of the prolapsed rectum has also been reported.<sup>9</sup>

Gastric perforation due to dog bite is an extremely uncommon condition. We could find three such reports. In two patients, there were two perforations on the anterior

surface.<sup>10,11</sup> In the third report, there was a single perforation with multiple tooth marks.<sup>12</sup> In the current report, there was a single perforation on the anterior surface of the stomach.

To conclude, every case of dog bite over torso needs thorough evaluation. Besides cleaning of the local wounds, suspicion of possible visceral injuries must be kept in mind and ruled out appropriately.

#### Conflict of Interest

None.

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