

# Starvation Demystified – An Autopsy Based Case Report

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## ABSTRACT

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A case is being presented here which was brought for autopsy with initial suspicion of starvation as an alleged causative factor. A detailed post-mortem examination revealed twisting of small intestines or volvulus which had led to intestinal obstruction and its attendant complications

**Keywords:** Starvation, Autopsy, Volvulus, Intestinal obstruction

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## INTRODUCTION

Starvation deaths are rare entities, but when they do occur they create some degree of social unrest especially when the victims are inhabitants of highly remote and far-flung rural areas that to a large extent lie in inaccessible and difficult terrains.

Extremes of life are the usual victims because they are dependent upon other members of the family for the necessities of life.<sup>1</sup> It can result from the actual withdrawal of food or from its deficiency. Actual withdrawal may be due to deliberate withholding of food or wilful refusal to take food. On the other hand a deprivation of regular and constant food supply can be acute as in getting trapped in mines and landslides or chronic as in famines.<sup>1,2</sup>

However the case that is being presented here, though initially involved an allegation or rather suspicion of the cause of death as being due to starvation, later revealed something more substantial that was responsible for the present state of affairs. It would therefore be not incorrect perhaps to say that it was the post-mortem examination that cleared the air of uncertainty that hitherto hung over the cause of death.

## CASE –REPORT

Dead body of a two year old female child was brought for autopsy to the Mortuary wing of Government Medical College Hospital. The available history was that of repeated fever, vomiting and convulsions since one

month for which the child underwent treatment from local and regional Government hospitals. Crown-heel length measured 86 cm and the weight was only 8.5kgs. Ribs were prominently standing out with concave intercostal spaces and concave abdomen. Limbs were thin and flaccid, cheeks hollow and eyeballs sunken. Scalp hair was sparse and brittle. An old surgical scar was found on the right side of abdomen near the umbilicus. Subcutaneous and mesenteric fat were substantially reduced.

All internal organs including the brain and heart were pale, otherwise unremarkable. The coils of small intestines involving the proximal ileum were found twisted several times around its mesentery. Mesentery showed thick adhesions as well. The intestinal segments distal to this were found to have dull, dark reddish- blue surfaces suggestive of ischemic necrosis. Their lumen contained thick bloody fluid. Stomach contents did not reveal anything unusual. Specimens for toxicology and histopathological evaluation were also sent as part of a comprehensive autopsy procedure. Based on the above mentioned post-mortem findings the cause of death was furnished as consistent with death due to intestinal obstruction. The obvious cause for the obstruction here being intestinal volvulus.

## DISCUSSION

Obstruction of the gastrointestinal tract may occur at any level, but small intestine is most often involved because of its relatively narrow lumen.<sup>3</sup> Intestinal ob-

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struction may be due to varied aetiologies including intussusceptions, volvulus and bowel atresia.<sup>4</sup>

The term volvulus refers to a twisting of a loop of bowel along the long axis of its mesentery.<sup>5</sup> It causes obstruction to the lumen and if tight enough also causes vascular occlusion in the mesentery leading to ischemia. Volvuli may be primary or secondary. Primary occurs secondary to congenital malrotation of the gut, abnormal mesenteric attachments or congenital bands. Secondary volvulus which is more common is due to rotation of a segment of bowel around an acquired adhesion. The cardinal features of obstruction are abdominal pain, distension, vomiting and constipation.<sup>6</sup>

The actual incidence of congenital malrotation of the gut is difficult to determine but is estimated to occur in 1 in 6000 live births. Complete non rotation of midgut is the most common anomaly and occurs when neither the duodenojejunal nor cecocolic limb undergoes a correct rotation. Midgut volvulus is a surgical emergency.<sup>7</sup>

And indeed a surgical emergency it was in the present case, as a further probe into the circumstances of the case by perusing relevant clinical records, revealed that as a newborn the child did manifest with features of intestinal obstruction. Surgical correction for volvulus (Ladd's procedure) was done at 3 months. Thereafter the clinical course was distressingly punctuated with repeated episodes of fever, vomiting and progressive malnourishment.

Now the question arises as to how did the same intestinal pathology arise subsequently even after surgical intervention. The observation in this case is in perfect agreement with existing literature which states that recurrent volvulus though relatively rare has been reported in up to 10% of children undergoing surgical correction. Here the more common cause for a post-operative obstruction is adhesive bands.<sup>7</sup>

In cases of intestinal obstruction (irrespective of cause), death may occur from bowel infarction or perforation with peritonitis. Alternatively it may occur

from the combined effects of electrolyte abnormalities, dehydration and sepsis.<sup>4</sup>

## CONCLUSIONS

The autopsy in this case has put to rest all suspicions regarding the cause of death. The severely malnourished state of the child due to intestinal obstruction consequent to volvulus had led to the apprehensions of it being due entirely to starvation. However it was the chronically progressive nature of the pathology that had ultimately ended fatally.

## END NOTE

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**Conflict of Interest:** None declared

**Editor's Remarks:** Certain clinical questions can be answered only on the autopsy table as illustrated in the case report. The case shows how assumptions can be deceptive in front of solid scientific evidence.

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