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## **Enema abuse by mothers of children presenting to the emergency room at the University of Calabar Teaching Hospital**

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**Abstract** Enema is largely used and widely abused in our community for various ailments including fever, constipation; abdominal pains vomiting and even diarrhoea.

**Objectives:** To describe the abuse of enema at home in the Calabar area, and the associated findings among children who received enema.

**Method:** Children admitted to the Children Emergency Unit of the University of Calabar Teaching Hospital with history of enema use at home were recruited into the study. The presenting symptoms, type of enema used and associated findings were documented. Relevant investigations were carried out where necessary. Tables and simple proportions were used to analyze the data.

**Results:** Twenty two children were seen with enema abuse over a six months period. Diarrhoea diseases

and fever were the predominant reasons why enema was given. Types of enema given were herbal concoctions in 13(59.1%) plain water enema in 8(36.4%) and salt water enema in one (4.5%) child. Electrolytes derangements were the commonest associated findings. Others were convulsions/coma, intestinal perforation, acute renal failure and severe dehydration from diarrhoea.

**Conclusion:** Enema abuse is a continuing cultural phenomenon in the Calabar area. It is associated with severe consequences including intestinal perforation. Enema abuse should form part of history taking in this environment and child care practitioners should actively search for possible complications. Most importantly, health education to stem this widespread practice

### **Introduction**

Enemas are used in many settings and for many purposes. These purposes include bowel cleansing before radiologic procedures, aiding in the administration of food and medicine, and treating constipation and encopresis in children.<sup>1</sup> Enema preparations often used in paediatrics, such as barium, soapsuds, and saline, have been associated with infrequent but important complications. Multiple reports describe metabolic derangements in serum phosphate, magnesium, sodium, calcium and potassium with the use of sodium phosphate, magnesium phosphate, enemas<sup>1-4</sup>

Transient bacteraemia has been noted with the use of barium, air, and coffee enemas.<sup>5,6</sup> Colonic perforation has been reported with over-the-counter enemas.<sup>7,8</sup> Allergic and anaphylactoid reactions have also been observed when saline, barium, and herbal preparations

have been used as enemas.<sup>9</sup>

Enema is largely used and widely abused in our community for various ailments including fever, constipation, abdominal pains vomiting and even diarrhoea.<sup>10</sup> This prospective work was designed to describe the abuse of enema at home in the Calabar area, and the associated problems that may arise from such abuse. It is hoped that the work will draw attention to this problem and increase the acumen of child health practitioners in preventing, recognizing and managing the problem.

### **Subjects and Methods**

Subjects were children seen in the Children Emergency Unit (CHU) of the University of Calabar Teaching Hos-

pital from May to October 2010 with history of enema use at home. The socio-demographic data of the parents and children were recorded. The symptoms that prompted parents and caregivers to give enema were also recorded. The type of enema given, the period from enema administration to admission or presentation in the hospital and the reason for enema administration was also noted. Findings at physical examination were recorded. The associated findings observed following administration of enema were documented. The electrolyte profile, blood culture, abdominal x-ray and abdominal ultrasound scan were carried out where applicable. Tables and simple proportions were used to analyse the data.

## Results

Of the 845 children admitted into CHU of the University of Calabar Teaching Hospital during this period, 22 had history of enema abuse representing 2.6% of the admissions within the period. Thirteen were males while nine were females.

Table 1 shows the age and gender distribution of the children with enema abuse. Diarrhoeal disease and fever were the predominant reasons why care givers administered enema. Other reasons were convulsions, abdominal pains, cough and vomiting (Table 2). Herbal concoction was the commonest substance used by parents in 13(59.1%) children followed by plain water enema in eight (36.4%) and salt water enema in one (4.5%) child (Table 3).

**Table 1:** Age/sex distribution among children who received enema

| Sex     | Age  |       |       |     | Total |
|---------|------|-------|-------|-----|-------|
|         | 0-12 | 13-24 | 25-36 | >36 |       |
| Males   | 6    | 2     | 2     | 3   | 13    |
| Females | 4    | 2     | 1     | 2   | 9     |
| Total   | 10   | 4     | 3     | 2   | 22    |

**Table 2:** Reasons for administration of enema

| Reasons         | Number | Percentage |
|-----------------|--------|------------|
| Fever           | 7      | 31.8       |
| Diarrhoea       | 7      | 31.8       |
| Abdominal pain  | 4      | 18.3       |
| Vomiting        | 2      | 9.1        |
| Convulsion/coma | 1      | 4.5        |
| Cough           | 1      | 4.5        |
| Total           | 22     | 100        |

**Table 3:** Type of enema administered in 22 children

| Type of enema     | Number | Percentage |
|-------------------|--------|------------|
| Herbal enema      | 13     | 59.1       |
| Plain water enema | 8      | 36.4       |
| Salt water enema  | 1      | 4.5        |
| Total             | 22     | 100        |

Electrolytes derangement such as Hypokalaemia, hyponatraemia, hypernatraemia and hyperkalaemia/acidosis were the commonest associated findings. Others were convulsions/coma, intestinal perforation, acute renal failure and severe dehydration. (Table 4)

**Table 4:** Associated findings in 22 children who received enema

| Associated findings               | Number of children | %    |
|-----------------------------------|--------------------|------|
| Hypokalaemia                      | 4                  | 18.2 |
| Hyponatraemia                     | 3                  | 13.7 |
| Hyperkalaemia/acidosis            | 1                  | 4.5  |
| Hypernatraemia                    | 1                  | 4.5  |
| Diarrhoea with hypovolaemic shock | 4                  | 18.2 |
| Intestinal perforation            | 2                  | 9.1  |
| Convulsion/coma                   | 1                  | 4.5  |
| Acute renal failure               | 1                  | 4.5  |
| No complication                   | 5                  | 22.8 |
| Total                             | 22                 | 100  |

## Discussion

Enema is widely used and largely abused in our locality. It is a popular phenomenon in this region as previously reported by Archibong et al.<sup>10</sup>

Major reasons why care givers give enema include treatment of diarrhoea and fever. Others are for abdominal pains, vomiting, cough and convulsions in contrast to western series where constipation and fecal impaction were the primary reasons for administration of enema.<sup>11,12</sup>

Clinical deterioration associated with electrolyte abnormalities have been previously reported with the use of many types of enemas. These abnormalities include hypokalemia, hypocalcemia, hypophosphatemia, acidosis, and hypernatremia.<sup>3,4</sup> In our study hyponatremia, hypokalemia, hypernatraemia, hyperkalaemia and acidosis were the main associated electrolytes abnormalities. While it is not clear whether this were primarily due to enema abuse it may at least have contributed to this and worsened the condition of the child.

Moore et al<sup>1</sup> described children with an “enema syndrome” where hyperkalemia was noted following administration of a variety of enemas. In their study, hy-

perkalemia was a predictor of fatal outcome. We found only one child with associated hyperkalemia who received herbal enema. The same child also had metabolic acidosis and renal failure. He fortunately recovered and was discharged home.

Intestinal perforation is another described hazard of enema administration and is suggested to occur from either tip injury or increased intraluminal pressure.<sup>7,8</sup> We found two children with intestinal perforation in our study. Both had surgery, unfortunately one died at surgery and the other survived. Typhoid perforation was excluded by stool and blood cultures and no other explanation could be found except enema abuse.

The present study observed convulsion in one child who also lapsed into coma. This child had received plain water enema and developed hyponatraemia and this may probably be responsible for the convulsions and coma.

## Conclusion

Children were and are still routinely given enema 'to cleanse the bowel'. This practice has been associated with severe consequences.

Enema abuse should form part of history taking in this environment and child care practitioners should actively search for complications. Most importantly health education to stem this widespread practice should be emphasized.

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