

## Diagnosis and Management of Pyloric Hypertrophy in Infants at Fousseyni Daou Hospital in Kayes, Mali

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**Abstract: Summary:** Hypertrophic pyloric stenosis is an obstruction of the lumen of the pylorus by muscular hypertrophy of the pyloric sphincter fg [1]. It is a rare disease in Africa: a recent publication in Tanzania reported 102 cases in 5 years [10]. Currently the diagnosis is based on abdominal ultrasound and the treatment is surgical. It affects 2 or 3 children out of 1000 and is more common in boys with a ratio of [4]. It occurs between 3 and 6 weeks of life and rarely after 12 weeks. Materials and methods: We conducted a retrospective study from January 2018 to December 2021 using patient records in the pediatric surgery department of the Fousseyni Daou hospital in Kayes. Results: During the study period we had performed 3260 consultations and we had performed 975 surgical interventions in patients hospitalized in the pediatric surgery department. 8 cases of hypertrophy of the pylorus were operated on, i.e. 0.82% of the operations, including 6 boys and 2 girls. The weight of the patients was between 2kg800 and 3kg500. The age of our patients varied between 05 days and 37 days of life 3 patients had been referred to us by the malnutrition unit of our pediatrics department. The hemoglobin level and the rhesus group had been carried out in all the patients and a moderate anemia had been detected in 3 patients. The ionogram had been performed in only 3 of the patients. Ultrasound confirmed the diagnosis of pyloric hypertrophy in all patients. A pyloromyotomy was performed in all patients with uncomplicated consequences. Conclusion: Pyloric hypertrophy is a rare pathology in our region (Kayes), the diagnosis is ultrasound and the treatment remains surgical.

**Keywords:** Hypertrophy, pylorus, Kayes, rare.

### INTRODUCTION

Hypertrophic pyloric stenosis is an obstruction to the outlet of the stomach due to thickening of the muscle at the junction between the stomach and the intestines. The thickened muscle creates a partial obstruction that interferes with the passage of stomach contents into the small intestine. Infants feed well but vomit vigorously and may become dehydrated and malnourished. It is a fairly rare pathology in Africa according to the literature, with a frequency of 2 or 3 children out of 1000[3], with a net male frequency of 4 boys for every girl. The diagnosis is mainly ultrasound and the treatment is still surgical in our developing countries.

### RESULTS

In 4 years from January 2018 to December 2021, we had consulted 3260 patients and performed 975 surgical procedures among patients hospitalized in the pediatric surgery department of the Fousseyni Daou hospital in Kayes, of which 0.82% were cases of pyloric hypertrophy (comparable). The mothers of the patients had made at least one prenatal consultation, 5 gave birth vaginally and 3 by caesarean section. The male sex was predominant, i.e. 62.5% as attested by the majority of studies and the female sex 37.5%. The main sign of consultation was vomiting in 100% of cases. We had no recency of premature during this study and 5 patients were first born, the weight of the children was in the norms between 2kg 800 3kg500. There were no

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**Citation:** Kouyate Mamaye, A S Diakite, S Sidibe S, A Doumbia, Coulibaly –O, Kane Moustapha, M Haidara (2022). Diagnosis and Management of Pyloric Hypertrophy in Infants at Fousseyni Daou Hospital in Kayes, Mali. *Cross Current Int J Med Biosci*, 4(2), 29-31.

smokers among the mothers of the patients nor any notion taking macrolides which are incriminated in the occurrence of pyloric hypertrophy(7). On physical examination we found 3 cases of dehydration associated with malnutrition, the pyloric olive was found on palpation in 4 patients. The blood count performed in all patients found anemia in 3 of our patients 10g / dl; 11g/dl. The complete ionogram performed in 3 of our patients found hyponatremia and hypochloremia in 2 patients and hypokalemia in one patient. Abdominopelvic ultrasound was performed in all our patients and objectified pyloric hypertrophy: fg(3). Pyloromyotomy according to Fredet Ramsdet: fig(2) was the main technique used and in all cases the incision was under the right costal supraumbilical. Breakdown of patients by reason for hospitalization

Reasons %	%
vomiting 100	100
dehydration 75	75
malnutrition 37.5	37,5

3 of our patients were referred from the malnutrition center

Distribution of patients by age:

Age	Workforce	%
0 -7 days	2	25
8 days to 14 days	3	37,5
15 days to 21 days	1	12,5
22 to 28 days	1	12,5
29 to 37 days	1	12,5
Total	8	100

The maximum number of patients was received between 8 days and 14 days

Distribution of patients by gender:

Gender	Workforce	%
Male	5	62,5
female	3	37,5
Total	8	100

The male sex was predominant

Distribution of patients according to birth order:

Number	Workforce	%
First born	5	62,5
Second born	1	12,5
Third born	2	25

The number of first born was more numerous

HPS ultrasound measurement

Measurement	Average value in mm	Average value in mm	Average value in mm
Pylori length	23,32	18mm	32
Thickening of the pyloric muscle	6,3	4,1	6,8
Cross diameter	13,8	9,4	16,7

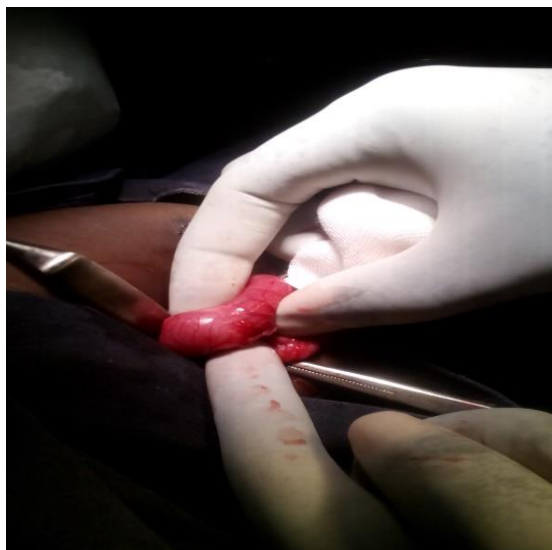
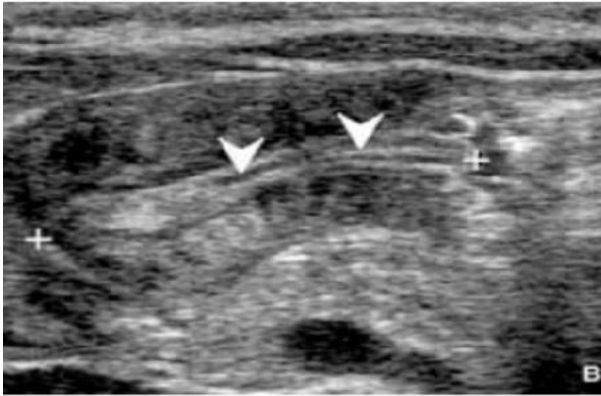


Fig-1: Pyloric hypertrophie



Fig-2: Pylerotomia



**Fig-3: Hypertrophic pyloric stenosis on ultrasound**

Ultrasound: (the crosses indicate the length of the pyloric canal)

### COMMENTS

Hypertrophic pyloric stenosis is a frequent cause of vomiting in infants, especially in boys [1]. Its pathogenesis has given rise to numerous hypotheses and none of them has been proven to date. During our study, we operated on 975 patients among those hospitalized in the pediatric surgery department, including 8 cases of hypertrophic pyloric stenosis, i.e. 0.82% of the interventions, this result is comparable to that of Oumou Kone of the Gabriel Touré University Hospital in Bamako. 0.95% but lower than that of Mahamoud Omid Ali who found 38 cases in 4 years. The birth weight in all our patients was within the norms and we had no recent cases of prematurity during the study. The male sex was predominant in our study 62.5%; as evidenced by many other studies [1, 2, 4, 7, 8, 10]. We did not find any factor favoring the occurrence of Hypertrophic Pyloric Stenosis such as: cigarettes, taking macrolides during pregnancy [7]. The notion of occurrence of Hypertrophic Pyloric Stenosis in the first born was found in our study because 5 of our patients were first born. Late management of Hypertrophic Pyloric Stenosis can lead to anemia and/or hydro-electrolyte disorders [4, 8, 9] that must be corrected. Ultrasound was the main radiological examination that allowed us to make the diagnosis in all our patients [5]. In our study, all our patients were operated on within 48 hours of the diagnosis of Hypertrophic Stenosis of the, after the placement of a nasogastric tube; and the correction of hydro-electrolyte disorders. Under general anesthesia, we performed a right supraumbilical

subcostal incision and performed a pyloromyotomy according to Fredet Ramstedt [2]. In all the patients the resumption of food had started in the hours following the intervention, after the ablation of the naso-gastric tube. The postoperative course was simple in all patients.

### CONCLUSION

Hypertrophic pyloric stenosis is a fairly rare disease in our region, but whose early diagnosis allows better management.

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