SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Pediatric Surgery

Abscess of Psoas in Children at Gabriel Toure Chu: About 31 Cases

Doumbia A[1*], Amadou I[1], Coulibaly O[1], Kamate B[1], Daou M B[1], Djire M K[1], Coulibaly Y[1]

[1]Pediatric Surgery Department of CHU Gabriel Touré Bamako-MALI

DOI: 10.36347/sasjs.2024.v10i04.005 | **Received:** 16.02.2024 | **Accepted:** 19.03.2024 | **Published:** 05.04.2024

***Corresponding author:** Dr Doumbia Aliou
Pediatric Surgery Department of CHU Gabriel Touré Bamako-MALI

Abstract **Original Research Article**

Introduction: A psoas abscess is a purulent collection in the psoas muscle compartment. The clinical diagnosis of psoas abscesses is difficult due to the misleading clinical presentation and poor and/or unspecific symptomatology. The etiologies are dominated by digestive and bone causes. The treatment of abscesses is based on antibiotic therapy which may or may not be associated with a puncture, percutaneous or surgical drainage. The prognosis depends on how early treatment is received and is generally favorable. We carried out this work with the objectives of studying the clinical and therapeutic aspect of psoas abscess. ***Patients and Method:*** A retro and prospective study of a series of 31 cases carried out in the pediatric surgery department at CHU Gabriel Touré over a period of 11 years from January 1, 2010 to December 31, 2020. All male patients from 0 to 15 year old with psoas abscess. ***Results:*** This is a series of 31 cases. An incidence of 2.8 cases per year. The average age of our patients was 49.9 months. A history of post-traumatic hematoma was found in 25.8% of cases. The consultation time was greater than or equal to 16 days in 54.9% of patients. The right psoas abscess found in 74.1% of patients. The pain was located in the right flank in 35.5% of cases. Fever was the most common general sign in 67.7% of cases. The psoitis sign was positive in 48.3% of cases. Lameness was absent in 67.8% of cases. The sedimentation rate was elevated in 38% of our patients. C-Reactive Protein was elevated in 61% of our patients. The culture was positive in 77.7% of cases. Staphylococcus aureus was the most frequently isolated organism in 33.3% of cases. An abdominal ultrasound was performed in 96.7% of cases showing a hypo-echoic image. The abscess was primary in 93.5% of cases. Medical treatment was carried out in 38.7% of cases. Ultrasound-guided puncture was performed in 93.5% of patients. Surgical treatment was carried out in 54.8% of cases. Retroperitoneal lombotomy was performed in 82.4% of cases. Washing + Drainage was carried out in 82.4% of cases. The 6-month follow-up was favorable in 90.3% of cases. ***Conclusion:*** Psoas abscess is a rare pathology. The clinical triad: fever, iliac and/or lumbar pain, abdominal mass is of great semiological value.

Keywords: Abscess, Psoas, Child, Bamako.

INTRODUCTION

A psoas abscess is a purulent collection in the psoas muscle compartment [1]. In 1881, psoas abscess was described and treated by Mynter H [1] for the first time, classifying them into primary form and secondary form, according to the physiopathological mechanism [2].

In the USA in 1992, Gruenwald *et al*., reviewed 434 published cases, 30% of which were primary abscesses and 70% were secondary abscesses [3].

In Europe, the hospital frequency of psoas abscess varies from one country to another with a predominance of secondary abscesses. Garcia *et al*., in Madrid (Spain) in 2011 found 30 cases in 26 years including 21 cases of secondary abscesses (70%) and 09 primary cases (30%); or 1.15 cases per year [4].

In Africa, the prevalences are approximately the same but with a predominance of primary abscesses [5]. The clinical diagnosis of psoas abscesses is difficult due to the misleading clinical presentation and poor and/or unspecific symptomatology. Diagnosis of psoas abscess is challenging. Any delay worsens the vital prognosis.

However, advances in medical imaging, including ultrasound, CT and MRI, allow for faster diagnoses. The etiologies are dominated by digestive and bone causes [6]. Staphylococcus is the most incriminated germ [6].

The treatment of abscesses is based on antibiotic therapy which may or may not be associated with a puncture, percutaneous or surgical drainage [6]. The prognosis depends on how early treatment is received and is generally favorable.

Given the absence of a specific study on psoas abscesses in children, we carried out this work with the objectives of studying the clinical and therapeutic aspect of psoas abscesses.

PATIENTS AND METHOD

We conducted a retro and prospective study from January 1, 2010 to December 31, 2020 in all children aged 0 to 15 years treated for psoas abscesses in the Pediatric Surgery department of the Gabriel Touré University Hospital. During the period from January 1, 2010 to December 31, 2020, consultation registers, operating report books and hospitalization files were consulted. The data were entered into MICROSOFT WORD and EXCEL 2016 and analyzed using SPSS version 25 software. The statistical test used was the Chi2 test.

RESULTS

In 11 years we have collected 31 cases of psoas abscess. An incidence of 2.8 cases per year. The average age of our patients was 49.9 months. A history of post-traumatic hematoma was found in 25.8% of cases. The consultation time was greater than or equal to 16 days in 54.9% of patients. The right psoas abscess found in 74.1% of patients. The pain was located in the right flank in 35.5% of cases. Fever was the most common general sign in 67.7% of cases. The psoitis sign was positive in 48.3% of cases. Lameness was absent in 67.8% of cases. The sedimentation rate was elevated in 38% of our patients. C-Reactive Protein was elevated in 61% of our patients. The culture was positive in 77.7% of cases. Staphylococcus aureus was the most frequently isolated organism in 33.3% of cases.

An abdominal ultrasound was performed in 96.7% of cases showing a hypo-echoic image. The abscess was primary in 93.5% of cases. Medical treatment was carried out in 38.7% of cases. Ultrasound-guided puncture was performed in 93.5% of patients.

Surgical treatment was carried out in 54.8% of cases. Retroperitoneal lombotomy was performed in 82.4% of cases. Washing + Drainage was carried out in 82.4% of cases. The 6-month follow-up was favorable in 90.3% of cases.

DISCUSSION

In our study, we found an annual frequency of 2.8 cases of psoas abscess per year. This frequency does not differ significantly from those of the authors [4-6]. It is lower than that of Audia [7], in France.

The average age of patients was 49.9 months with a range of 24 months to 180 months in our study. On the other hand, Millogo [5], in his study found an average age of 42.6 months.

In our series, 67.7% of our patients had no pathological history. This result is higher than those of: Manass [8], in Morocco and Penado [9], in Spain 9 cases (56%) and 15 cases (65%) and does not present a significant difference from that of Sangaré [6], in Mali 20 cases (66.6%). The most often found history was abdominal trauma, i.e. 25.8%. This could be explained by the fact that some children hide the traumatic event, due to the inappropriate reactions of certain parents.

The average duration of symptom progression was 29.81 days in our study. This result does not differ statistically from those of the authors Sangaré (Mali) [6]. Millogo (Burkina Faso) [5], Audia (France) [7]. On the other hand, there is a statistical difference of P=0.0001 with the Moroccan series (55 days) Manass (Morocco) [10].

Pain was found in all our patients. It was located in 11 cases at the level of the right flank, 04 cases at the level of the left flank, 05 cases at the lumbar level, 10 cases in the right iliac fossa and 01 cases in the lumbar fossa + right iliac fossa. Our results are consistent with those of the literature where pain was found in all our patients in almost all of the series reviewed.

In our study, deterioration of general condition was found in 80.06% of cases. This result differs from those of the following authors: Millogo (Burkina Faso) [5], Audia (France) [7], Ghita I. M. H. M (Morocco) [10], and comparable to that of Sangaré (Mali) [6].

Fever is the main general sign found in almost all of our patients, i.e. 21 cases out of 31, with a temperature of 38.5°C. This result is similar to that of Sangaré [6], which found 24 cases out of 30. Unlike Millogo Burkina Faso [5], which found 19 cases out of 20 and in other series Manass, Morocco [10], Audia, France [7], which respectively found in all cases, 16 cases out of 16; 6 cases out of 6.

Our study found the renitent and painful mass located at the level of the right iliac fossa in 32.25% of cases. This result is lower than those of: Sangaré [6], Millogo Burkina Faso [5], Ghita I. M. H. Maroc [10], with respective values (73.3%), (65%), (72.7), (70 %).

Psoïtis was present in 15 cases out of 31, or (48.3%). This rate does not differ statistically from those of the following authors: Sangaré [6], (73.3), Audia France [7], (33.3%), Millogo Burkina Faso [5], (35%), Diakité I [11] and differs from that of Ghita I. M. H. Maroc [10], P=0.0001 with values (100%).

Hyperleukocytosis was found in all our patients with a rate of 100%. This result was found from that of Manass in Morocco [10], and differs from those of the following authors: Millogo (Burkina Faso) [5], Sangaré (Mali) [6], Audia (France) [7].

In literature reviews, the sedimentation rate (ESR) is a parameter that is constantly accelerated during psoas abscesses [10-12]. In our study series, 8 out of 12 patients had accelerated ESR in the first hour. This result is identical to that of Sangaré (Mali), i.e. (66.6%) [6].

A cyto-bacteriological study of the pus was carried out in 27 patients, i.e. (87%). The most frequently found germ was Staphylococcus aerus, i.e. (33.3%). This result corroborates those in the literature [14, 15].

In our series, ultrasound was performed in almost all of our patients and allowed us to confirm the diagnosis. The role of ultrasound in the positive diagnosis of psoas abscesses is well demonstrated in the literature [1-15].

An inclusive triple antibiotic therapy combining Ceftriaxone, Metronidazole and Gentamicin was sufficient for the treatment of psoas abscess in 12 patients, or 38.70%. Kraiema [20], defends this theory of antibiotic therapy alone without drainage, but in selected cases such as primary abscesses not extended to neighboring structures and with a diameter less than 1.5 cm.

In our study, 19 patients benefited from surgery, two (2) of which were by ultrasound-guided puncture and seventeen patients benefited from flattening + washing + drainage. Surgical drainage is the most common type of intervention performed in developing countries like ours [5, 6]. On the other hand, percutaneous drainage is mainly the prerogative of developed countries.

CONCLUSION

Psoas abscess is a rare pathology. The clinical triad: fever, iliac and/or lumbar pain, abdominal mass is of great semiological value.

REFERENCES

1. Dave, B. R., Kurupati, R. B., Shah, D., Degulamadi, D., Borgohain, N., & Krishnan, A. (2014). Outcome of percutaneous continuous drainage of psoas abscess: a clinically guided technique. *Indian Journal of Orthopaedics*, *48*, 67-73. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3931156/?report=Pr...
2. Takada, T., Terada, K., Kajiwara, H., & Ohira, Y. (2015). Limitations of using imaging diagnosis for psoas abscess in its early stage. *Internal Medicine*, *54*(20), 2589-2593. http://www.naika.or.jp/index.htm
3. Gruenwald, I., Abrahamson, J., & Cohen, O. (1992). Psoas abscess: case report and review of the literature. *The Journal of urology*, *147*(6), 1624-1626.
4. García, M. P., Laguna, P., Lopez, G., Castañeda, P., & Navarro M. (2011). Abcès pyogènes et tuberculeux du psoas musculaire. *Rev Clin Esp*, *211*(11), 572-8.
5. Millogo, K. (2012). L'abcès du psoas à propos de 20 cas colligés entre 2001 et 2012 au CHU-YO et à la PNDP Ouagadougou [Mémoire]. Ouagadougou, Université Josef KI-ZERBO.
6. Sangaré, S. (2018). Abcès du psoas au CHU Gabriel Touré, Bamako (Mali) : à propos de 30 cas [Mémoire]. Bamako, Université de Bamako.
7. Audia, S., Martha, B., Grappin, M., Duong, M., Buisson, M., Couaillier, JF, ... & Piroth, L. (2006). Secondary pyogenic abscesses of the psoas: report of six cases and review of the literature. *The Journal of Internal Medicine* , *27* (11), 828-835.
8. Echarrab, M., Medarhri, J., El Ounani, M., Louchi, A., Amraoui, M., & Errougani, A. (2000). Les abcès du psoas à pyogènes: A propos de 21 cas. *Médecine du Maghreb*, *79*, 1-4.
9. Penado, S., Espina, B., & Francisco, C. J. (2001). Abscess of the psoas muscle. Description of series of 23 cases. *En ferm infecc Microbiol Clin*, *19*(6), 257-60.
10. IBN MAJDOUB HASSANI Ghita TRAITEMENT PAR DRAINAGE PERCUTANE DE L'ABCES DU PSOAS Thèse médecine Maroc (Fès) 2016 N°015/16.
11. Diakité, I. (2006). Abcès du psoas au CHU Gabriel Touré, Bamako (Mali) : à propos de 11 cas [Mémoire]. Bamako, Université de Bamako, (M 34).
12. Losseff, S. (1996). *Les abcès du psoas, à propos de 7 cas vus en deux ans à l'hôpital de Perpignan* (Doctoral dissertation, Montpellier 1).
13. Conde, R., Estebanez, J., & Rodrigues, A. (2000). Treatment of psoas abscess : percutaneous drainage or open surgery. Prog. *Urol*, *10*(3), 418-23.
14. Lee, Y. T., Lee, C. M., Su, S. C., Liu, C. P., & Wang, T. E. (1999). Psoas abscess: a 10 year review. *Journal of Microbiology, Immunology, and Infection= Wei Mian yu gan ran za zhi*, *32*(1), 40-46.
15. Losseff, S. (1996). *Les abcès du psoas, à propos de 7 cas vus en deux ans à l'hôpital de Perpignan* (Doctoral dissertation, Montpellier 1).
16. García, M. P., Laguna, P., Lopez, G., Castañeda, P., & Navarro, M. (2011). Abcès pyogènes et tuberculeux du psoas musculaire. *Rev Clin Esp*, *211*(11), 572-8.
17. Audia, S., Martha, B., Grappin, M., Duong, M., Buisson, M., Couaillier, JF, ... & Piroth, L. (2006). Secondary pyogenic abscesses of the psoas: report of six cases and review of the literature. *The Journal of Internal Medicine* , *27* (11), 828-835.
18. Rantamala, H. Y. H., Rakotoarioa, A. J. C., Rakotoarioa, B., Andriamanarivo, M. L., Rakototiana, A., & Kapisy, J. F. (2005). Les volumineux abcès primitifs du psoas chez l'enfant: à propos de 03 cas. *Arch péd*, *12*, 102-04.
19. Marrakchi, C., Kilani, B., Kanoun, F., Abdelmalek, R., Tiouiri, H., Goubontini, A., ... & Ben Chaabane, T. (2006). Les abcès mélitococciques du psoas: étude de 3 cas et revue de la littérature. *Méd trop*, *66*, 2615.
20. Kraiem, C., & Gharbhi, H. J. (2004). Abcès à pyogène du psoas. *J Radiol*, *71*, 93-6.