International Surgery Journal
Bishal G et al. Int Surg J. 2017 Nov;4(11):3773-3775
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20174905

Case Report

Successful embolectomy of bilateral femoral artery thrombosis in neonate

Bishal Gautam*, R. M. Mathur, Sanjeev Devgarha, Anula Sisodiya

Department of Cardiothoracic and Vascular Surgery, SMS Medical College and Attached Group of Hospitals, Jaipur, Rajasthan, India

Received: 13 September 2017
Accepted: 03 October 2017

***Correspondence:**
Dr. Bishal Gautam,
E-mail: docbishalgautam@gmail.com

ABSTRACT

In childhood, the incidence of thrombotic disease, both spontaneous and catheter-induced, is highest in the neonatal period. Depending on the thrombus location, degree of aortic occlusion and involvement of other organs, aortic thrombosis clinical signs range from a completely asymptomatic presentation to a life threatening neonatal emergency. We report a case of aortoiliac thrombosis in a 12 days old baby, who presented with complaints of bluish-black patches on right foot for 4 days. Lower limb CT (Computed Tomography) Angiography showed thrombus in abdominal aorta involving proximal part of right common iliac artery. The anticoagulant therapy was initiated and surgical embolectomy was performed with restoration of blood flow, but the patient developed gangrene of right foot during the follow up period.

Keywords: Aortoiliac thrombosis, Embolectomy, Gangrene

INTRODUCTION

In childhood, the incidence of thrombotic disease, both spontaneous and catheter-induced, is highest in the neonatal period. Depending on the thrombus location, degree of aortic occlusion and involvement of other organs, aortic thrombosis clinical signs range from a completely asymptomatic presentation to a life threatening neonatal emergency.

CASE REPORT

A 12 days old female baby was brought in the CTVS (Cardio Thoracic and Vascular Surgery) outpatient department with complaints of bluish-black patches on right foot for 4 days. The patches progressed to involve the right lower limb below the knee. The baby was delivered at full term at Mahatma Gandhi District Hospital, Bhilwara with a weight of 1 kg. The natal course was uneventful. There was no history of birth asphyxia or umbilical artery catheterization in this child. Antenatal period was uneventful. The baby was not breastfeeding, and the milk was spoon feed. There was no history of fever. Family history was not significant.

On examination, the child was active but irritable. Lower limb pulses including the femorals were not palpable and right lower limb was dusky with bluish-black patches. The patient was diagnosed as right lower limb gangrene (Figure 1), secondary to? right femoral artery thrombosis. Systemic examination was normal. Baseline investigations were within normal limit except mild thrombocytopenia.

Angiography of aorta revealed thrombus in aortic bifurcation and right common iliac artery. Lower limb CT (Computed Tomography) Angiography showed

thrombus in abdominal aorta involving proximal part of right common iliac artery.

Figure 1: Right lower limb gangrene.

Figure 2: Thrombus material after removal.

On the basis of input from neonatologists, cardiologists and haematologists, anticoagulant therapy with standard heparin was initiated immediately on admission according to the Italian Society of Neonatology Recommendations for diagnosis and treatment of neonatal thrombosis.[1] In a scenario of acute life threatening vesssel occlusion, surgical embolectomy was decided. The patient was taken to operation theatre after clearance from anaesthetist. Written informed consent was sought from the patient's parents before operation. Bilateral Femoral Embolectomy was done with 3.0 F Fogarty catheter and fresh thrombus material was removed (Figure 2). Pulsatile proximal flow established with good distal run off. In post-operative follow up after one month, gangrene developed in the right foot followed by auto-amputation of the gangrenous part as shown in (Figure 3). The patient was referred to plastic surgery department for tissue cover of the distal right leg stump.

Figure 3: Auto-amputation of right foot.

DISCUSSION

In childhood, the incidence of thrombotic disease, both spontaneous and catheter-induced, is highest in the neonatal period.[2] Aortic thrombosis in newborn period is an infrequent but catastrophic event which is associated with predisposing conditions like umbilical artery catheterization, dehydration, polycythemia, cyanotic congenital heart disease, patent ductus arteriosus, sepsis, lupus anticoagulant and inherited defects in coagulation.[3-9] Most cases remain idiopathic.[10]

Depending on the thrombus location, degree of aortic occlusion and involvement of other organs, aortic thrombosis clinical signs range from a completely asymptomatic presentation to a life threatening neonatal emergency.[11]

Signs of aortic obstruction can be variable and include absent lower extremity pulses, lower limb ischemia ranging from pallor, poikilothermia to cyanosis and gangrene, renal failure, congestive heart failure and hypertension.

Colour flow doppler ultrasonography is the investigation of choice for aortic thrombosis but other methods like CT Angiography are more useful.

Recently, The Italian Society of Neonatology has developed recommendations for the diagnosis and treatment of neonatal thrombosis.[12] However, these have been drawn from trials in adult and paediatric patients without rigorous evaluation of their efficacy and safety in newborns. Available options include anticoagulation with heparin, thrombolysis with tissue plasminogen activator

(tPA), surgical embolectomy, and finally, watchful waiting.[13] An early diagnosis is mandatory for the initiation of treatment without delay.

CONCLUSION

Neonatal Aortic Thrombosis is a rare and often fatal event, which is extremely challenging for the medical team involved in its management. Treatment is hampered by the lack of adequate clinical trials involving the neonatal population and a multidisciplinary approach is fundamental in evaluating the risk: benefit ratio of proposed medical and surgical interventions. Further studies are needed to improve consensus evidence based guidelines to ensure appropriate approaches to this condition.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Andrew M, Marzinotto V, Massicotte P, Blanchette V, Ginsberg J, Brill-Edwards P, et al. Heparin therapy in pediatric patients: a prospective cohort study. Pediatric Research. 1994;35(1):78-83.
2. Zipursky A, Schmidt BK. Neonatal thrombosis and embolism. In: Neonatology: Pathophysiology and Management of the Newborn. Ed Avery GB. Philadelphia, JB Lipincott Company; 1986:687-690.
3. Boo NY, Wrong NC, Syed Zulfikli SZ, Lye MS. Risk factors associated with umbilical vascular catheter-associated thrombosis in newborn infants. J Pediatr Child Health. 1999;35:460-5.
4. Suri M, Ramji S, Thirupuram S, Sharma BK. Spontaneous aortic thrombosis in a neonate. Indian Pediatr. 1994;31:846-9.
5. Tugrul KI, Tinaztepe K, Yurdakul Y. Aortic thrombosis in the newborn infant. J Cardiovas Surg. 1984;25:246-8.
6. Knowlson GT, Mardsen HB. Aortic thrombosis in the newborn period. Arch Dis Child. 1978;53:164-6.
7. Szymankiewicz M, Oszkinis G, Uchman J. Abdominal aortic-iliac thrombosis as a complication of newborn's bacterial sepsis. Ginekol Pol. 2005;76:61-6.
8. Sheridan-Pereira M, Porreco RP, Hays T, Burke MS. Neonatal aortic thrombosis associated with the lupus anticoagulant. Obstet Gynecol. 1988;71:1016-8.
9. Sanchez J, Velasco F, Alvarez R, Roman J, Torres A. Aortic thrombosis in a neonate with hereditary antithrombin III deficiency: successful outcome with thrombolytic and replacement treatment. Acts Peditr. 1996;85:245-7.
10. Saracco P, Parodi E, Fabris C, Cecinati V, Molinari AC, Giordano P. Management and investigation of neonatal thromboembolic events: genetic and acquired risk factors. Thromb Res. 2009;123(6):805-9.
11. Saxonhouse MA. Management of neonatal thrombosis. Clin Perinatol. 2012;39(1):191-208.
12. Lofù I, Di Mauro A, Di Coste A, Scalini E, Basile V, Codazzi D, et al. Idiopathic Neonatal Aortic Arch Thrombosis: A Case Report. EuroMediterranean Biomedical Journal. 2014;9(5):36-40.
13. Monagle P, Chan AK, Goldenberg NA, Ichord RN, Journeycake JM, Nowak-Göttl U, et al. American College of Chest Physicians. Antithrombotic therapy in neonates and children: Antithrombotic Therapy and Prevention of Thrombosis, 9th Ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012;141(2):e737S-801S.

Cite this article as: Bishal G, Mathur RM, Devgarha S, Sisodiya A. Successful embolectomy of bilateral femoral artery thrombosis in neonate. Int Surg J 2017;4:3773-5.