

# Rare and Severe Postpartum Complication of Ovarian Venous Thrombosis: About 3 Cases and Literature Review

N. MOHAMED ZEINE, B. LEMHABA, M. Mohamed Lemine, K.Saoud,  
 N.Mamouni, S.ERRARHAY, C.BOUCHIKHI, A.BANANI  
 Obstetric Gynecology Department I. CHU HASSAN II FES

**Abstract:-** Postpartum ovarian vein thrombosis is a rare complication that can be life-threatening for the maternal prognosis. The extension of the thrombosis to the inferior vena cava leads to a risk of pulmonary embolism and requires urgent management. Through 3 cases of thrombophlebitis of the ovarian vein observed in our department, we try to address this subject.

**Keywords:-** Delivery, Post Partum, Ovarian Vein Thrombosis.

## I. INTRODUCTION

Ovarian vein thrombophlebitis (OVT) is a rare but potentially serious complication occurring most often in the immediate postpartum period [1]. It may also occur outside an obstetrical context complicating certain pelvic inflammatory or neoplastic conditions or following surgery or pelvic trauma [2,3]. Its exact incidence is difficult to establish (4). In most cases, it affects the right ovarian vein and results in a non-specific abdominal syndrome in a febrile context [4, 5].

## II. OBSERVATIONS

We report the cases of 3 patients who were hospitalized post partum for iliac fossa pain associated or not with homolateral flank pain with or without fever.

- Case 1: A 20-year-old primiparous patient was admitted at 4 days postpartum following a vaginal delivery for right flank pain and IDF in the context of a fever of 39°C. The postpartum examination was unremarkable, with a biological inflammatory syndrome consisting of a hyperleukocytosis with neutrophils and high CRP. the abdomino-pelvic scanner showed a thrombosis of the right ovarian vein.
- Case 2: A 36 year old female patient, G3P3, with a triple scar uterus was admitted on the first day after caesarean section for the management of a pelvic pain syndrome, apyretic, the clinical examination was poor, and the biological work-up was unremarkable. The abdomino-pelvic scanner showed a thrombosis of the left ovarian vein with a left latero-uterine hematoma which resolved spontaneously.

- Case 3: 22-year-old primiparous patient admitted at 5 days postpartum for right flank and IDF pain evolving in a febrile context with a temperature of 38.5. The clinical examination was unremarkable, she presented a biological inflammatory syndrome, the pelvic CT scan showed a thrombosis of the right ovarian vein extending to the IVC With right ovarian ischemia.

All patients received curative anti-coagulation based on low molecular weight heparin (LMWH), associated with a broad spectrum antibiotic therapy with a favorable evolution of the symptomatology. Preventive measures are planned for our patients in case of future pregnancy.

## III. DISCUSSION

Ovarian vein thrombosis (OVT) is a rare postpartum complication [1-4]. Diagnosis is often difficult due to non-specific symptoms [5]. In the absence of adequate and timely treatment, the evolution can lead to serious complications (pulmonary embolism, septic shock), which can be life threatening for the maternal prognosis [6]. Its exact incidence is difficult to establish(4), the first case of ovarian vein thrombophlebitis was described by Austin in 1956, more recent literature data suggest an incidence of 0.05%, or 1 case of DVT per 2000 births [7, 8]. The rate of OVT is 10 times higher after caesarean section than after vaginal delivery [09]. OVT occurs more frequently in multiparous women [10] with an average parity of 2.5 and an average age of 25 years [11]. In cases where management is adapted, the mortality from OVT is less than 5% [12,13]. The pathophysiological mechanisms that cause OVT are not clearly established. Nevertheless, like all phlebitis, Virchow's triad is thought to be the cause of this complication [14]. It associates 3 factors:

- A state of hypercoagulability related to the increased production of certain pro-coagulant factors inherent to any pregnancy and which continues up to 6 weeks post partum with a peak on the 4th day [13,15]. This state of hypercoagulability may be related to congenital mutations of coagulation factors
- Venous stasis which is the consequence of dilation of the ovarian veins during pregnancy associated with a slowing of blood flow occurring in the immediate postpartum period [16] ;

➤ An alteration of the venous wall which may result either from direct trauma caused by a caesarean section or an instrumental extraction, or from indirect trauma via an endo-uterine infection [17, 8]. Indeed, endometritis is associated with OVT in 45 to 67% of cases [10, 11]. Postpartum ovarian vein thrombosis (OVT) most often involves the right ovarian vein, in 80% of cases, according to the literature, it is on the left in 6% of cases and in about 14% of cases the involvement is bilateral [8, 18, 19]. This predominance on the right side is explained by anatomical reasons, which are, on the one hand, the dextro-rotation of the gravid uterus, which compresses the lumbo-ovarian ligament [20], and, on the other hand, by the existence of a retrograde flow in the left ovarian vein, protecting it from ascending infection, whereas the flow remains anterograde on the right [21, 22]. Clinically, the initial symptoms most often appear during the first week [23] and on average on the 4th day [18]. The clinical picture often consists of a painful and febrile postpartum syndrome located in the iliac fossa or the right lumbar fossa [1,24,25]. Other more or less associated signs (nausea, vomiting, abdominal mass) may be observed [24]. This symptomatology is non-specific and may suggest other conditions such as appendicitis, pyelonephritis, upper genital infection, cholecystitis or a broad ligament hematoma [1-25]. In case of diagnostic difficulty, it is easily confirmed by imaging. Transparietal abdominal ultrasound coupled with Doppler is the first radiological investigation requested. Its sensitivity is often lacking and varies from 50 to 100% with a specificity close to 100% [21-24,25]. The limitations of ultrasound are often explained by the presence of gastrointestinal gases, hence the need to complement it with an abdominopelvic CT scan with contrast injection, which confirms the diagnosis with a sensitivity ranging from 92 to 100% and a specificity of 100% [25-21]. The CT scan also indicates an extension to the IVC or to the pulmonary vessels, thus confirming pulmonary embolism. Magnetic resonance imaging (MRI) is rarely performed, but allows dating the age of the thrombosis due to the ferromagnetic characteristics of the thrombus [25-21]. In our patients, the CT scan confirmed the diagnosis and showed an extension towards the IVC in one of them, although there was no floating thrombus or pulmonary embolism.

Treatment is very often medical [1,24 ,26-27]. It is based on a broad-spectrum antibiotic therapy that covers anaerobic germs and gram-negative bacilli; the infectious component is always present [1,24,-27]. This antibiotic therapy is combined with effective anticoagulation with curative dose heparin (enoxaparin 1 mg/kg×2/day) followed by a relay with antivitamin K for a period of six months [1, 24,-27].

This therapeutic protocol adapted to our patients has proven to be effective and the evolution is usually favorable (80% of cases) with disappearance of clinical signs after 48 hours of well-conducted treatment [27]. This was the evolutionary mode in our patients. An unfavorable evolution with persistence of clinical symptoms after five days of

correctly conducted treatment, the existence of a floating vena cava thrombus or in case of pulmonary embolism and the contraindication to medical treatment constitute indications for surgical treatment [1-22-27]. This treatment consists of a vena cava filter or thrombectomy of the IVC and ligation of the right VO [28]. The best prevention of postpartum DVT consists of preventing any potentially septic and/or traumatic gesture during delivery and/or de' delivery (8). Prevention by heparin therapy (enoxaparin 0.4mL subcutaneous) with the wearing of an elastic restraint throughout the next pregnancy and in the postpartum period should be prescribed for patients at high risk of thromboembolism according to the recommendations of the French Society of Anesthesia and Resuscitation (SFAR) [29].

#### IV. CONCLUSION

Ovarian venous thrombosis remains a rare and serious complication of the immediate postpartum period. It is imperative to evoke it and look for it in the event of any postpartum feverish abdominal pain syndrome, especially if the patient is multiparous and if the delivery is instrumental, or by cesarean section.

#### REFERENCES

- [1]. Hafsa C, Golli M, Jerbi-Omezzine S, Salem R, Kriaa S, et al. Une cause rare de fièvre du post-partum : la thrombophlébite de la veine ovarienne. Ann Fr Anesth Reanim 2006;25:286—90.
- [2]. Simons GR, Piwnica-Worms DR, Goldhaber SZ. Ovarian vein thrombosis. Am Heart J 1993;126(3 Pt 1):641–7.
- [3]. Jacoby WT, Cohan RH, Baker ME, Leder RA, Nadel SN, Dunnick NR. Ovarian vein thrombosis in oncology patients: CT detection and clinical significance. AJR Am J Roentgenol 1990;155(2):291–4.
- [4]. Quarello E, Desbriere R, Hartung O, Portier F, D’Ercole C, Boulli L. Thrombophlébite de la veine ovarienne du post-partum. À propos de 5 cas et revue de la littérature. J Gynecol Obstet Biol Reprod (Paris) 2004;33:430-40.
- [5]. Kominiarek MA, Hibbard JU. Postpartum ovarian vein thrombosis: an update. Obstet Gynecol Surv 2006;61:337-42.
- [6]. Kettaneh A, Tourret J, Fain O, Tigaizin A, Seror O, et al. Thrombophlébite de la veine ovarienne et fièvre du post-partum. Rev Med Interne 2002;23:1012—7.
- [7]. Austin OG. Massive thrombophlebitis of the ovarian veins; a case report. Am J Obstet Gynecol 1956;72(2):428–9.
- [8]. J. Lerouge a,\* S. Sanguin b, J. Gondry b, F. Sergent b, Prise en charge de la thrombose veineuse ovarienne du post-partum. L’expérience du CHU d’Amiens, Gynecologie Obstétrique & Fertilité 44 (2016) 88–95
- [9]. Brown CE, Stettler RW, Twickler D, Cunningham FG. Puerperal septic pelvic thrombophlebitis: incidence and response to heparin therapy. Am J Obstet Gynecol 1999;181(1):143–8.

- [10]. Dunnihoo DR, Gallaspy JW, Wise RB, Otterson WN. Postpartum ovarian vein thrombophlebitis: a review. *Obstet Gynecol Surv* 1991;46(7):415–27.
- [11]. Brown TK, Munsick RA. Puerperal ovarian vein thrombophlebitis: a syndrome. *Am J Obstet Gynecol* 1971;109(2):263–73.
- [12]. Meuwly JY, Kawkabani A, Sgourdos G. Thrombose veineuse ovarienne. *Forum Médi-cal Suisse* 2012.
- [13]. Salomon O, Dulitzky M, Apter S. New observations in postpartum ovarian vein thrombosis: experience of single center. *Blood Coagul Fibrinolysis* 2010;21(1):16–9.
- [14]. Virchow R. Thrombosis and emboli (1846–1856). Canton, Mass: Science History Publications; 1998 [234 p].
- [15]. Kuehn A, Assadian A, Reeps C, Maria Schneider K-T, Stangl M, Berger H, et al. Thrombus cave flottant à partir de la veine ovarienne. *Ann Chir Vasc* 2009;23(5):747.e13–1.
- [16]. Hodgkinson CP. Physiology of the ovarian veins during pregnancy. *Obstet Gynecol* 1953;1(1):26–37.
- [17]. Quarello E, Desbriere R, Hartung O, Portier F, d'Ercole C, Boublé L. Thrombophlebite de la veine ovarienne du post-partum. *J Gynecol Obstet Biol Reprod* 2004;33(5):430–40.
- [18]. Sappey O, Mollier S, Skowron O, Equy V, Ranchoup Y, Descotes JL, et al. [Puerperal thrombophlebitis of the ovarian vein revealed by renal colic]. *Prog Urol* 1999;9(2):313–8.
- [19]. Munsick RA, Gillanders LA. A review of the syndrome of puerperal ovarian vein thrombophlebitis. *Obstet Gynecol Surv* 1981;36(2):57–66.
- [20]. Quarello E, Desbriere R, Hartung O, Portier F, d'Ercole C, et al. Thrombophlébite de la veine ovarienne du post-partum : à propos de cinq cas et revue de la littérature. *J Gynecol Obstet Biol Reprod (Paris)* 2004;33:430—40.
- [21]. Ranchoup Y, Thony F, Dal Soglio S, Farah I, Bosson JL. Thrombophlébite de la veine ovarienne avec extension cave inférieure : aspects en échographie, TDM et IRM. *J Radiol* 1998;79:127–31.
- [22]. K. Abdeljalil et al. Thrombophlébite de la veine ovarienne : une urgence à ne pas méconnaître, *Imagerie de la Femme* (2010) 20, 165—168
- [23]. Chawla K, Mond DJ, Lanzkowsky L. Postpartum ovarian vein thrombosis. *Am J Emerg Med* 1994;12(1):82–5.
- [24]. Rault S, Anjar A, Keller E. Thrombose de la veine ovarienne droite remontant jusqu'à la veine cave inférieure dans le postpartum. *Gynecol Obstet Fertil* 2007;35:658—61.
- [25]. Quarello E, Desbriere R, Hartung O, Portier F, d'Ercole C, et al. Thrombophlébite de la veine ovarienne du post-partum : à propos de cinq cas et revue de la littérature. *J Gynecol Obstet Biol Reprod (Paris)* 2004;33:430—40.
- [26]. Rahili A, Delotte J, Desprez B, Bongain A, Benchimol D, et al. Thrombose de la veine ovarienne droite. *Presse Med* 2004;33:937—9.
- [27]. Bandaly F, Chaar J, Asmar G, Bardiau Y, Sayegh A, et al. Thrombophlébite de la veine ovarienne du postpartum : une urgence à ne pas méconnaître. *J Eur Urg* 2008;21:134—7.
- [28]. Leluc O, Guillou PO, Portier F, Capelle M, Chaumoitre K, et al. Quel est votre diagnostic ? Douleurs abdominales du postpartum. *Feuill Radiol* 1999;39(2):149—52.
- [29]. Société française d'anesthésie et de réanimation. Prévention de la maladie thromboembolique veineuse périopératoire et obstétricale. Recommandations pour la pratique clinique. Texte court 2005. *Ann Fr Anesth Reanim* 2005;24:952—76.