A pregnancy-related spontaneous coronary artery dissection: Psychiatric considerations

Dissection spontanée d’une artère coronaire en post-partum : considérations psychiatriques

Peripartum spontaneous coronary artery dissection (SCAD) is a rare event [1,2]. Most cases are discussed from a cardiologic standpoint. We present a case where the psychic impact of such illness is highlighted to stress the need for closer psychiatric monitoring in these instances. Psychological stressors might contribute to etiology either directly or indirectly through the use of hormones to foster pregnancy. We will stress here the psychic consequences.

Case report

A 39-year-old woman, six months after delivering her second child, was admitted to hospital for acute chest pain and loss of consciousness. A coronaryography showed an acute dissection of the left anterior descending artery (LAD). The ECG was suggestive of an antero-lateral infarct with Troponin T elevated up to 5861 ng/L (N ≤ 50 ng/L). An echocardiography showed a slight pericardic effusion and a left ventricle ejection fraction around 25%. Her past medical history included hypothyroidism and obesity (BMI: 37 kg/m²), but pertinent negatives for standard cardiovascular risks were substance abuse, blood dyscrasias, dyslipidemia, smoking, hypertension, cardiac family history. She reported having taken progesterone (prometrium) for fertility (100 mg for 3 months; 200 mg for 2 months) and she had resumed oral contraceptives intake two months after delivery. The medical treatment was conservative, mainly antiplatelet therapy.

Four days after admission, a psychiatric consultation was requested to address her anxiety and distress. The patient was a college teacher in a stable marital relationship. She had a four-year-old daughter and a six-month-old baby girl. She has had two previous spontaneous abortions prior to her deliveries. She reported a difficult latest pregnancy because of important symptoms of hyperemesis gravidarum. She consulted a psychiatrist during that time because she was irritable and anxious. She acknowledged occasional brief panic outburst while separated from her husband who worked away from home frequently. She was also concerned that her baby would somehow know that she had thoughts about interrupting her pregnancy on account of feeling too sick. She felt inadequate for her older child because of her irritability and impatience. The psychiatrist diagnosed an anxiety disorder not otherwise specified (DSM-IV: 300.00) with fears about the upcoming delivery and prescribed citalopram 10 mg daily, which she took for two months. There was no other significant psychiatric history. The delivery was uneventful and the patient reported a slight “baby blues” of short duration. She managed well her immediate postpartum and cared for her newborn, but remained slightly dysphoric and anxious until her actual health problem. A week prior to the coronary dissection she was diagnosed with oto-sclerosis and loss of audition that she attributed to abnormal hormonal levels during pregnancy. When first seen by our inpatient consultation-liaison team, she felt guilty of being unable to take care for her family and of causing them sorrow and suffering due to her current condition. Her sleep was disturbed by recurrent flashbacks of the events preceding her admission. She voiced some ambivalent feelings about her newborn as she spoke of her difficult pregnancy and the problems it had brought her such as the hyperemesis gravidarum, the dysphoric mood, the hearing loss and the spontaneous coronary artery dissection. She explained that she wanted that last child mainly to fulfill her daughter’s and husband’s wishes. She alluded to a difficult relationship with her mother. Trazodone 50 mg HS for three months was prescribed for her sleep and the patient was offered supportive therapy while in hospital. While she continued to have preoccupations about her children at home, she was reluctant to having them visit her in the hospital. In the following days, her sleep improved, her flashbacks decreased, and her children visited with relief and comfort for all. After conservative medical treatment, she was discharged within a week to the cardiology outpatient clinic without significant improvement in her cardiac function. She was referred to her psychiatrist for follow-up. A month later, she still had night-time flashbacks, but was functioning well at home. Two months after her cardiac disease, the cardiologist reported that her left ventricular ejection fraction was around 38%. Six months later, a follow-up contact showed that the patient was at home, still on medical leave from work as a teacher, and doing well with her baby whose development was uneventful. She still had
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flashbacks 4–5 times fortnightly, during daytime or at night whenever she felt more tired. Her anxiety was slight and she had regular psychological help with a professional to help deal with it. There were no mention of any “hearing loss”. She was not taking any psychiatric medication.

Discussion

Postpartum period can extend up to 6 months [1]. The occurrence of pregnancy-related SCAD is rare, between once in 16,000 deliveries [2] to 1/35,000 deliveries [3] in the USA. Nonetheless, while the disease is infrequent, the consequences upon patients and their families are important. One study reported a 10-year mortality rate of 7.7% and a 10-year rate of major adverse cardiac events up to 47.4% [4]. Few women require heart transplantsations [5]. Aside from a relatively guarded cardiac prognosis, the psychiatric complications following this condition have not been reported. One can expect the same complications to arise than those occurring after an acute myocardial infarction (AMI), such as a major depressive episode or an increase in anxiety. However, we stress here three distinct psychological aspects compared to the general cardiac population:

- the impact of hormonal treatment to foster pregnancy as a sign of possible difficulties: the patient had some difficulty to get pregnant, and she resorted to progesterone. Excess progesterone might alter elastic fibres and collagen of vessels [6]. Oral contraceptives have been associated with the occurrence of coronary artery dissection [6] albeit infrequently, thus the significance of those associations is still unclear. The patient herself attributed adverse consequences of hormonal intake, but this could not be documented, neither to assess her “hearing loss” which was not clinically evident nor her putative high progesterone levels;

- the psychiatric context of the pregnancy: her last pregnancy appeared to have stirred conflicting feelings which might have played as an emotional stressor. In the absence of evident cardiovascular risks, emotional factors have been reported [7,8] associated with coronary artery dissection as presumptive etiological significance. The anxious disorder diagnosed by her psychiatrist supports here such association, as it might have been under-treated;

- the psychiatric consequences appear as the main aspect of the emotional impact of the coronary artery dissection. The patient suffered a slight post-traumatic disorder, which improved with a light night-time medication and regular contact with her psychiatrist. The differential diagnosis eliminated a major depressive disorder on account of a stable level of functioning and signs of anxiety rather than lowered mood. An acute stress disorder was also discarded as anxiety was present before the cardiac event and her mind set was geared towards her children rather than her cardiac condition per se. However, that post-traumatic disorder seemed to follow anxious and conflicting state of mind during pregnancy, state which weight might have contributed associated with the cardiac event.

This disease affects women in the peripartum, so one can expect their age to be younger and their baseline health status to be better than the usual AMI population. They are confronted with their own mortality much sooner and unexpectedly. They might be anxious about the future and how the disease will bear on their lives. Following an important cardiac function decrease, several aspects of their lives can be altered, such as hobbies, occupation and capacity to take care of others. These young mothers are in a vulnerable position with regards to their offspring. They could feel ambivalent about their newborn considering the pregnancy brought onto them the disease and the subsequent losses.

In the case we presented, such ambivalence was significant. That ambivalence stemmed from two sources: the complications of pregnancy and the earlier unsettled wish to become pregnant. She thought she had paid a high price for a pregnancy she was not sure she wanted in the first place. She felt pressured by her family to have another baby, even though previous pregnancies had been troublesome as she had had two previous miscarriages before delivering her first child. Her later alleged complications of hearing loss and SCAD seemed to feed mixed feelings toward her child. Thus, we feared some problem of ambivalent attachment to her baby to happen that follow-up did not confirm so far in that case. The patient also expressed another important psychological conflict we think might be common in women with peripartum SCAD: she was torn between her need of being cared for as a patient and her role of caretaker for her child. This situation increased her anxiety of not being a good-enough-mother. She felt guilty of being hospitalized and absent from home. She also feared her diminished functional capacities following her cardiac complications would impact her future ability of being an adequate mother. We hypothesized that her heightened level of anxiety during pregnancy might be a result from her ambivalence to be a mother again. It was unclear to us if this increased stress played a role into developing peripartum SCAD. We found 4 cases of SCAD unrelated to pregnancy where recent emotional stressors were postulated a contributing etiological factor in women [7–10]. However, no cases of SCAD triggered by emotional distress in the peripartum have been described in the literature.

As most cases of peripartum SCAD occur in multiparous women [5], pregnancy alone does not seem to cause sufficient emotional stress to trigger the disease since “experienced mothers” are likely to be less anxious during pregnancy than primiparous women. On follow-up contact, it appeared that her bond with her child was satisfactory, and whichever ambivalence that might have been present was receding with time. However, the
older daughter still anxiously asked her mother once in a while about the cardiac episode.

**Conclusion**

That case report suggests that young mothers with that rare but serious cardiac complication might be at risk for experiencing emotional distress and ambivalent attachment toward their baby. Hence a need for further monitoring and research on that specific aspect for which the literature offers no guidelines. Further data are also needed to conclude that psychological stressors during pregnancy increase the likelihood of SCAD. Post-traumatic stress disorder might be a complication.

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**References**


