

An Unexpected Conception: Spontaneous Pregnancy Following Bone Marrow Transplantation

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Dear Editor,

Haematopoietic stem cell transplantation (HSCT) following chemotherapy and radiotherapy is a potentially curative treatment for haematological malignancies but is frequently associated with gonadotoxicity, premature ovarian insufficiency (POI), and infertility.^{1,2} Prolonged amenorrhoea with biochemical evidence of ovarian failure is common among female transplant recipients, and many do not regain ovarian function.² We describe a case of spontaneous pregnancy in a woman with longstanding amenorrhoea following intensive oncological treatment and allogeneic bone marrow transplantation.

A 28-year-old nulliparous woman was referred to a maternal medicine clinic at approximately 22 weeks' gestation following an incidental diagnosis of pregnancy. She had presented with lower abdominal discomfort and a subjective sensation of fetal movement. She had acute lymphoblastic leukaemia diagnosed in 2017, treated with multi-agent chemotherapy (Hyper-CVAD protocol: cyclophosphamide, Vincristine, Adriamycin, Dexamethasone), tyrosine kinase inhibition, and subsequent allogeneic bone marrow transplantation abroad. Her treatment course was complicated by pulmonary aspergillosis, Epstein–Barr virus reactivation, viral cardiomyopathy with a previously documented left ventricular ejection fraction of 32%, and bilateral central retinal vein occlusion resulting in significant visual loss in the right eye.

Following completion of treatment, she developed secondary amenorrhoea and was diagnosed with premature ovarian failure. She had remained amenorrhoeic from 2017 to 2025 with biochemical evidence of ovarian insufficiency, making subsequent spontaneous conception particularly unexpected. In 2025, she had one brief episode of vaginal bleeding earlier in the year. Biochemical investigations demonstrated elevated follicle-stimulating hormone and luteinising hormone levels with low estradiol, consistent with ovarian insufficiency. She had been awaiting specialist endocrine review when spontaneous pregnancy was confirmed.

Serial fetal growth assessments demonstrated appropriate interval growth. A transthoracic maternal echocardiogram during pregnancy showed normal cardiac structure and function.

An oral glucose tolerance test diagnosed gestational diabetes mellitus, managed with insulin therapy. Routine antenatal investigations were otherwise unremarkable, and she required no hospital admissions. At 35 weeks and 5 days' gestation, she presented in spontaneous labour and achieved an uncomplicated vaginal delivery. Estimated blood loss was 200 mL. A healthy female infant weighing 2.9 kg was delivered with Apgar scores of 9 at one and five minutes. Both maternal and neonatal outcomes were favourable.

This case illustrates that spontaneous pregnancy may occur after HSCT and intensive gonadotoxic therapy, even in the context of prolonged amenorrhoea and biochemical evidence of POI. Although the risk of permanent ovarian failure increases with patient age and conditioning intensity, particularly with total body irradiation, ovarian recovery has been reported in a small subset of women.²⁻⁴ Most available data derive from cohort studies and isolated case reports, and the true incidence of post-transplant fertility remains uncertain.¹⁻⁴

This case underscores the importance of counselling reproductive-age cancer survivors regarding residual fertility potential, even when amenorrhoeic with laboratory features suggestive of ovarian insufficiency.^{1,3,4} Appropriate contraception advice should be offered where indicated. Pregnancies following HSCT warrant multidisciplinary management involving obstetric medicine, haematology, cardiology, and endocrinology to optimise maternal and neonatal outcomes.

Declaration of Conflicts of Interest:

None declared.

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