Routine Coagulation Tests in Cases of Missed Abortion — Is it Really Necessary?

R. Chandran, MRCOG
N. Adeeb, FRCOG

Department of Obstetrics & Gynaecology, Universiti Kebangsaan Malaysia, Kuala Lumpur

Summary

Many gynaecological units have a policy of performing routine coagulation tests in cases of missed abortion. For many years now, it has been accepted practice in our unit to perform routinely a platelet count, bleeding time (BT), clotting time (CT) and plasma fibrinogen (P. fib) level prior to evacuation in cases of missed abortion. We are not sure how or why these 4 tests came to be chosen as a coagulation 'screen'. As they are not totally adequate in detecting disseminated intravascular coagulation (DIC), we wondered if these tests added to the management in any way.

Patients, Methods and Results

The operating theatre records were scrutinised for all patients in our gynaecological unit who had an evacuation of the uterus performed for a missed abortion over a 2 year period from 1st August 1987 to 31st July 1989. As it was the unit policy at that time to admit patients with a missed abortion after 20 weeks gestation to the maternity ward, this report therefore only deals with cases of missed abortion before 20 weeks gestation.

There were a total of 178 such patients, for 168 of whom notes were traced. The gestational age, regression of pregnancy symptoms, presence of 'quickening', uterine size, ultrasound findings and mode of evacuation were noted. Clinical findings suggestive of DIC were looked for; these included petechiae, ecchymoses, bleeding from mucous membranes, haematomas, prolonged bleeding from venepuncture sites and excessive uterine bleeding during and following evacuation. The coagulation investigations were noted as was the need for any transfusion of blood or blood products.

One hundred and twenty-nine patients had coagulation tests performed (Table I). The results of these tests (Table II) were not appreciably different from the normal range. Two patients had low plasma fibrinogen levels of 1.0 g/L. In both these cases, the platelet count, BT and CT were normal; the uterus was only 8 weeks size and evacuation was carried out uneventfully.

In this group of 129 patients, 5 had a uterus of 14 weeks size, 2 had a uterus of 16 weeks size and 1 had an 18 weeks size uterus. All these 8 patients had normal coagulation tests and evacuation was initially carried out with the use of intramuscular sulprostone and then completed by conventional curettage. The remaining 121 patients had a uterine size of 12 weeks or less and had a conventional curettage. None of the 129 patients had any clinical evidence of DIC.

Despite the unit policy, 39 patients (23.2%) had no coagulation tests prior to evacuation of the uterus. All these patients had a uterus smaller or equal to 12 weeks save 1, who had a 16 weeks sized uterus. No clinical features of DIC were observed in any of these 39 patients.

Table I
Coagulation tests in cases of missed abortion, UKM unit 1.8.87 – 31.7.89

Tests	No. of patients	(%)
Platelet count, BT, CT, P. fib	42	(25.0)
BT, CT, P. fib	77	(45.8)
BT, CT only	5	(3.0)
Platelet count only	5	(3.0)
None	39	(23.2)
Total	**168**	**(100.0)**

Table II
Breakdown of coagulation test results in cases of missed abortion, UKM unit 1.8.87 – 31.7.89

Results	No.	Range	Mean	Standard deviation	Normal range
Platelets x 10^9/L	47	125 – 350	203	55	150 – 450
BT min. (Dukes)	124	1.0 – 2.5	1.2	0.4	≤3.0
CT min. (Lee & White)	124	4.5 – 9.0	6.0	1.0	5.0 – 11.0
P. fib g/L	119	1.0 – 8.6	2.6	1.1	1.5 – 4.5

It was not possible to determine accurately the duration of retention of the dead foetus in this study. None of the 16 patients had a gestational age exceeding 18 weeks. Not surprisingly, none of them had felt any 'quickening' and so, cessation of foetal movements could not be used to estimate the maximum possible time that the foetus had been dead. Only 3 patients reported regression of pregnancy symptoms; only 6 patients had had an early ultrasound scan confirming foetal viability and in all these cases, the scan had been performed within 4 weeks of the second scan confirming foetal demise.

Discussion

The coagulopathy that may occur with prolonged retention of a dead foetus is thought to result from fibrinogen consumption following the release of thromboplasmin from the retained products of conception1. Coagulopathy only seems to occur after 16 weeks gestation and in general, only when the dead foetus has been retained in utero for more than 4 weeks[2]. In our small study, none of the patients had any clinical evidence of DIC. Although not clarified by this study, this could have been due to the dead foetus being retained in utero for less than 4 weeks.

With regard to the coagulation tests, the results were not appreciably different from the normal range. Given that the 4 tests used are not adequate in screening for DIC, some of these patients could have had a low grade DIC without overt clinical manifestations. Two patients had low P. fib levels of 1.0 g/L but

it is known that the fall in fibrinogen level is unlikely to be associated with an increased bleeding tendency until its level has fallen below 1.0 g/L3.

A quarter (25%) of the patients had all 4 tests performed but another quarter or so (23.3%) did not have any coagulation tests. When these 2 subgroups were compared, there appeared to be no difference in the subsequent management. We therefore feel that the information gained from a platelet count, BT, CT, and P. fib in cases of missed abortion before 20 weeks' gestation does not add to the subsequent management and in fact may delay evacuation of the uterus thus compounding maternal distress.

If coagulation studies are to be performed to screen for DIC, then they should include a platelet count, prothrombin time, partial thromboplastin time and levels of fibrogen/fibrogen degradation products. Ideally, coagulation studies should only be performed when the foetus has been known to be dead for 4 weeks or more. In the absence of a routine early ultrasound scan and short of performing a weekly or monthly scan, it would be difficult to estimate the duration of foetal death prior to the 'quickening'.

In such a situation, one may therefore have to rely on the uterine size. It has been suggested that DIC is unlikely when the uterine size is less than 16 weeks[2]. The number of patients in this study with a uterine size equal to or greater than 16 weeks is too small to draw any conclusions on a cut-off size of the uterus on which to base a decision on performing coagulation studies. This is in part due to the fact that only missed abortions before 20 weeks gestation were included in this study. Clearly, a large prospective study is needed to resolve this issue.

References

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