

## Late second trimester miscarriages

A second trimester miscarriage is the spontaneous loss of a pregnancy between 12 and 22 weeks of pregnancy. This is indeed a very sad experience to the parents. It has been said that a miscarriage may cause more grief to the mother than a later loss, because she has not experienced the motherhood of carrying the pregnancy to term to have a normal birth. She may therefore feel that she has failed as a mother.

There is very little information on rates and common causes of late second trimester miscarriages. Most countries have no system in place to routinely collect information on second trimester miscarriages prospectively, in contrast to the mandatory registration of all births. Although the loss rate is very high in early pregnancies, it declines to between 0.7% and 3% in the second trimester. After a gestation of 16 weeks, the likelihood of losing a pregnancy is only 1%.

Leading causes of late second trimester miscarriages are very similar to the causes of early stillbirths, as clearly reflected in the reference article. More than 7000 pregnancies were prospectively followed from booking for antenatal to delivery. Care was taken to determine the gestation age by early ultrasound, at what gestational age demise of the fetus had occurred (by checking the last date when a fetal heartbeat was observed), and the duration of the period between fetal demise and birth.

	Placental Histology	Autopsy	Maternal age (years)	Gravidity	GA at delivery (weeks)	Birth-weight (g)	Placental weight (g)	Placental Findings
1	Yes	Yes	17	1	21	408	154	Infection and placental detachment
2	Yes	Yes	26	2	22	60	42	Placental insufficiency
3	Yes	Yes	17	1	23	160	140	Infection
4	Yes	Yes	20	2	25	148	70	Umbilical cord obstruction
5	Yes	Yes	25	2	21	50	41	Placental insufficiency
6	No	Yes	36	1	21	450	NA	NA
7	Yes	Yes	32	2	22	410	104	Infection and placental detachment
8	Yes	Yes	17	1	21	331*	82	Infection
9	Yes	Yes	23	2	21	103*	49	Termination of pregnancy for genetic abnormality
10	Yes	No	32	2	19	N/A	282	Infection, placental insufficiency and detachment
11	Yes	Yes	31	4	21	336*	132	Placental detachment
12	Yes	Yes	29	2	22	62*	31	Placental insufficiency and detachment
13	No	Yes	22	2	21	71*	N/A	NA
14	Yes	Yes	23	3	22	400	131	Placental insufficiency and detachment

\*No birth weight available, only autopsy weight; GA=gestational age; NA=not available

Tab. 1. Placental histology associated with late second trimester miscarriages (alive at 20 weeks but demised before 22 weeks' gestation)

Placentas were collected for microscopic examination and consent for autopsy was obtained, as far as possible. An excellent follow-up rate of 98 % was achieved. The table (Tab. 1) explains the findings in 14 pregnancies. The most common abnormalities were placental detachment (placental abruption), placental insufficiency (maternal vascular malperfusion) and intrauterine infection. However, a combination of these findings was found in five placentas. The very low birth weights of participants 2, 5, 12, and 13 demonstrate

how severe fetal growth restriction could be. Late miscarriages could therefore easily be confused with earlier miscarriages, if the precise gestational age, as determined by ultrasound in early pregnancy, is not known.

In addition to detachment of the placenta, placental insufficiency and infection, there are many other causes of second trimester miscarriages such as autoimmune diseases, thrombosis of the vessels of the placenta and umbilical cord, deficient placental growth factors, uterine anomalies, cervical weakness, and endocrine diseases.

It is important to know that the abnormalities associated with placental insufficiency and some other causes tend to repeat in subsequent pregnancies. More attention should therefore be given to national statistics on late second trimester miscarriages and placental histology should be requested as far as possible in all cases, as this would help one to learn more about its etiology to take appropriate steps for prevention during the next pregnancy.

The key abnormality associated with placental insufficiency, placental detachment, fetal growth restriction and later complications of pregnancy such as preeclampsia, is failure of the narrow spiral arteries of the uterus in early pregnancy to widen to larger vessels to provide sufficient blood and nutrient supply to the developing placenta and fetus.

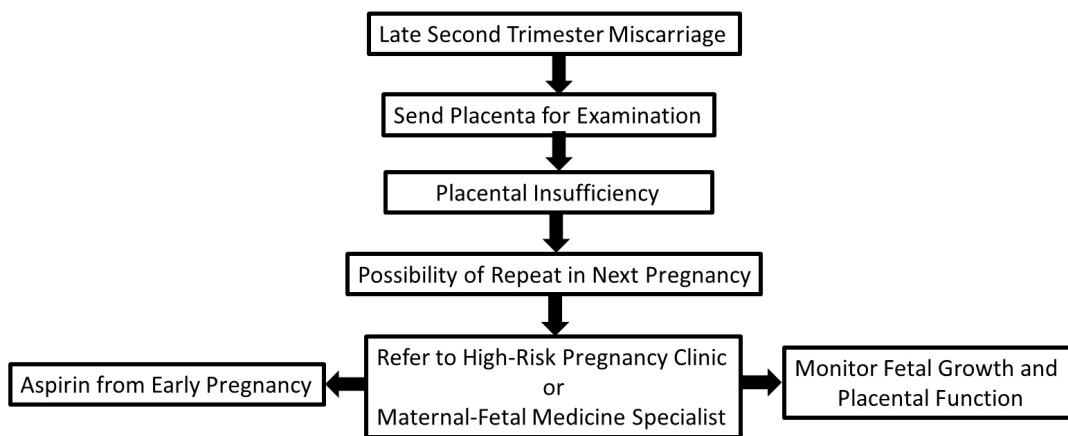


Fig. 1. Management of pregnancy following a late second trimester miscarriage

It is important to remember that the abnormalities associated with placental insufficiency tend to repeat in subsequent pregnancies. As drugs, such as low dose aspirin, may help to reduce the risks of these conditions when started in early pregnancy, it is essential to identify women at risk as soon as possible to start with the administration of low dose aspirin and to arrange for careful follow-up of the pregnancy as explained in the Figure 1.

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## **Publication**

[Association of late second trimester miscarriages with placental histology and autopsy findings](#)

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