OBJECTIVE: To compare the initial clinical presentation of patients who were treated at our center for gestational trophoblastic neoplasia (GTN) between 1996 and 1998 and between 2006 and 2008.

STUDY DESIGN: All patients seen at Weston Park Hospital for GTN (excluding placental site trophoblastic tumor [PSTT]) between 1996 and 1998 (total, 79) and between 2006 and 2008 (total, 139) were identified and their medical records reviewed. Features from when they first presented with gestational trophoblastic disease (GTD), excluding PSTT, were recorded. During those time periods 1,391 and 1,623 patients, respectively, were registered at our center with GTD.

RESULTS: The following results were noted: abnormal vaginal bleeding remains the most common presentation; the proportion of abnormal ultrasound scans at initial diagnosis has risen from 1% to 12%; the mean gestational age of the antecedent pregnancy has dropped from 11.3 to 10.1 weeks; the mean number of evacuations has fallen from 1.9 to 1.2, and the proportion of patients having 2 evacuations has more than halved; and the proportion of patients presenting with GTD requiring chemotherapy for GTN was 4.2% (59 of 1,391) for 1996–1998 and 6.7% (109 of 1,623) for 2006–2008.

CONCLUSION: An improvement in ultrasound technology and expertise in early pregnancy is likely to have contributed to a trend toward a lower gestational age at diagnosis of GTD. We noted a major shift in practice towards a higher threshold for repeat evacuations and an increased proportion of patients with GTN receiving chemotherapy. (J Reprod Med 2012;57:279–282)

Keywords: chemotherapy, gestational trophoblastic disease, gestational trophoblastic neoplasia, ultrasound.

Gestational trophoblastic disease (GTD) includes a spectrum of disorders comprising partial and complete hydatidiform moles and gestational trophoblastic neoplasia (GTN) (persistent and invasive moles, choriocarcinoma and placental site trophoblastic tumor).

It has been reported that patients with GTD are presenting earlier in their gestation and that the initial presenting features are different from those seen previously, with vaginal bleeding still being most common, but with features such as increased uterine size, preeclampsia, hyperemesis, hyperthyroidism and respiratory insufficiency becoming less...
common. It has been proposed that the use of ultrasound as a means of diagnosis is increasing, detecting GTD at an earlier point in gestation. However, other factors, including gravidity and the number of evacuations performed as a method of treatment, have not been compared for past and recent presentations.

We therefore decided to perform an evaluation, retrospectively comparing data from patients treated one decade apart to see if there have been any significant changes, not only in the presentation of GTN but also of diagnosis and management.

**Materials and Methods**

All patients seen at Weston Park Hospital for GTN (excluding placental site trophoblastic tumor) between 1996 and 1998 (total, 79) and between 2006 and 2008 (139) were identified and their medical records reviewed. Features from when they first presented with GTD were recorded. During those time periods 1,391 and 1,623 patients, respectively, were registered at our center with GTD.

The factors studied included age and ethnicity of the patient, presenting features, gestational age on diagnosis, gravidity, histological category of GTD, the number of evacuations performed and hCG level at presentation. For the numerical categories the mean and standard deviation were calculated. For each category a histogram was created with the values normalized according to cohort size. We then compared the change in mean, standard deviation and distribution between the two cohorts. An independent samples two-tailed t test was conducted to compare the number of evacuations, gestational age and gravidity between the two cohorts.

**Results**

Below we report the categories that demonstrated change between the two cohorts.

Figure 1 shows that abnormal vaginal bleeding remains the most common presentation of GTN (58% and 59%, respectively). It also shows that the proportion of patients having abnormal ultrasound scans at initial diagnosis has risen from 1% to 12%. Fewer patients presented with persistent bleeding post-evacuation (PBPE) (33% to 17%, respectively). Figure 2 shows that more patients in cohort 2 were diagnosed at <12 weeks (59% to 71%). The data from this category also shows that the mean gestational age of the antecedent pregnancy has dropped from 11.3 to 10.1 weeks (p = 0.25, nonsignificant).

The data in Figure 3 shows that in cohort 2 the number of women diagnosed in their first pregnancy (29% to 37%) or during their fifth or greater pregnancy (6% to 10%) has increased. The mean gravidity fell slightly from 2.5 (standard deviation [SD], 1.47) in the first cohort to 2.4 (SD, 1.42) in the second cohort (p = 0.48, nonsignificant).

Figure 4 shows that the proportion of patients having 2 evacuations has halved (from 59% to 28%),
while the number having only 1 has more than tripled (from 14% to 68%). The mean number of evacuations has fallen significantly, from 1.9 (SD, 1.63) to 1.2 (SD, 0.58) ($p < 0.01$).

The data also shows a rising trend for the proportion of patients presenting with GTD requiring chemotherapy for GTN: from 4.2% (59 of 1,391 patients) for 1996–1998 to 6.7% (109 of 1,623 patients) for 2006–2008.

There were no significant differences between cohorts for maternal age and ethnicity, histological category of GTD and hCG level at presentation.

**Discussion**

We reviewed the initial presenting features and found that in keeping with previous studies,$^{1,2}$ abnormal vaginal bleeding is still the most common presentation, being present in 58% and 59% of patients in the first and second cohorts, respectively. However, there were fewer patients presenting

![Figure 2](gestational_age.png) Gestational age.

![Figure 3](gravidity.png) Gravidity.
with persistent bleeding following evacuation (33% and 17%, respectively).

It was also identified that the gestational age at diagnosis had reduced from a mean of 11.3 weeks in the first decade to 10.1 weeks in the second. The proportion of abnormal ultrasound scans at initial diagnosis had risen from 1% to 12%. This is thought to be due to a combination of increased sensitivity of ultrasonography and improved radiological and clinical expertise in early pregnancy.

The role of repeat uterine evacuation in persistent GTN has been debated previously.3,4 In the present study the mean number of evacuations performed fell significantly, from 1.9 (in the 1996–1998 cohort) to 1.2 (in the 2006–2008 cohort), the proportion of patients having 2 evacuations having more than halved. This, and the fact that fewer patients presented with persistent bleeding following evacuation, may be due to a better understanding of the pathological process of GTN and an increased use of chemotherapy for such patients. Indeed, the proportion of patients presenting with GTD receiving chemotherapy for GTN was 4.2% (59 of 1,391) for patients in 1996–1998, compared to 6.7% (109 of 1,623) for patients in 2006–2008. At the time of this writing, the Gynaecologic Oncology Group is currently conducting a Phase II study of second curettage in patients with persistent low-risk, nonmetastatic gestational trophoblastic neoplasia (GOG-0242).

Gravidity > 1 fell in the second decade, except in the ≥5 category. This may simply reflect a slowly declining birth rate in the UK, apart from in large families.

Conclusion
A combination of the improvement in ultrasound technology and of clinical expertise in early pregnancy is thought to have contributed to a trend toward a lower gestational age at diagnosis of GTD. It is this trend that is also thought to be partly responsible for the previously reported differences in presenting features, with vaginal bleeding remaining the most common but many of the more traditional systemic features becoming less frequent.

A change in medical practice has also been identified, showing a higher threshold for repeat evacuations and an increased proportion of patients receiving chemotherapy.

References