# Career choices: foundation year trainees' views on careers advice and information

***This article looks at careers information sources and advice for junior doctors in foundation training programmes and their specialty of choice. The need for targeted career planning is discussed.***

Junior doctor training is undergoing a period of change following the Modernising Medical Careers (MMC) reforms (Department of Health, 2004). The curriculum and operational framework for the foundation years states the need for careers planning, advice and information (Department of Health, 2005a, b). In addition, a MMC career management booklet has been published setting out 14 standards which need to be achieved with medical schools, deaneries and Royal colleges working together to achieve these standards (Department of Health, 2005c). Deaneries have been setting up career management teams and MMC monies for careers have been given to each deanery. This article looks at sources and quality of careers advice used by foundation doctors, popularity of specialties and differences by gender, foundation year or place of qualification.

## Methods

A 17-item 4-page questionnaire looking at the type and quality of careers advice received to date, trainee's knowledge of MMC, specialty/specialties interested in and useful workshops to be included in a careers fair. The last six questions collected demographic data on the trainee including whether a foundation year one (F1) or foundation year two (F2) trainee, age, gender, year and medical school of qualification, and trust of current employment. Questions had tick-box options or a yes/no format with the quality of careers advice received being scored on a Likert scale ranging from 1 (not at all useful) to 5 (very useful).

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The questionnaire was circulated to 841 junior doctors undertaking a foundation year 1 or 2 training placement in the West Midlands Deanery via the postgraduate clinical tutors and associate postgraduate deans for the foundation years. Responses were monitored and e-mail reminders sent. In four trusts with a zero response rate, members of the deanery careers team went to foundation year teaching to distribute and collect the questionnaires.

All data were entered in an Excel spreadsheet and then SPSS (version 13.0) was used for analysis. Statistical analysis was carried out using Mann–Whitney tests for careers advice by gender, and F1 compared with F2 doctors, Kruskal–Wallis test for variations by university of qualification, and chi-squared tests for specialty most interested in. The three questions which required trainees to enter free-text comments were analysed using NVivo qualitative analysis software for key themes using the principles of content and coding analysis (Coffey and Atkinson, 1996).

This study did not require ethical approval as it is a service evaluation study.

## Results

There was a 60% (508/841) response rate to the questionnaire. Demographic data are shown in *Table 1*.

### Source and quality of careers advice

Informal advice was the commonest source and had the second highest mean score for quality (3.74) (*Table 2*). The highest mean score for advice quality was given to other sources including the internet, teaching sessions, the armed services and consultants in the trainee's preferred specialty. However, only 13 trainees listed these other sources. Frequent listed sources of advice were educational supervisors (67%) and postgraduate clinical tutors (55%) with mean scores of 3.65 and 3.48 respectively. The lowest three mean scores for quality of advice was that given at medical school, by Royal college tutors and by MMC deans. Key themes which emerged from analysing free text on suggestions for improving careers advice were to provide up to date and clear information on MMC, to give specialty training information and precise information on the future for current foundation trainees and how to plan for the future at a time of change in training. Both formal careers advice and pathways as well as individual advice were requested.

### Popularity of specialties

Most respondents (476, 94%) stated a preference for career specialty whereas 32

**Table 1. Demographic data of foundation trainees who answered the careers questionnaire**

| Foundation doctors ($n=493$) | Number of trainees (%) |
|---|---|
| Foundation year one (F1) | 274 |
| Foundation year two (F2) | 219 |
| **Gender ($n=492$)** | |
| Male:female | 266:226 |
| **Age ($n=492$)** | |
| 20–25 years | 260 |
| 26–30 years | 198 |
| 31–35 years | 31 |
| 36–40 years | 2 |
| >40 years | 1 |
| **Year of qualification ($n=466$)** | |
| 2005 | 219 |
| 2004 | 126 |
| 2003 | 32 |
| 2002 | 34 |
| 2001 | 18 |
| 2000 or earlier | 37 |
| **Place of graduation ($n=403$)** | |
| UK | 280 (69.5%) |
| EU | 23 (5.7%) |
| Overseas | 100 (24.8%) |
| **Place of graduation by year** | |
| UK F1:F2* | 82%:54% |
| Overseas F1:F2* | 12%:46% |
| EU F1:F2 | 6%:5% |

Numbers in brackets are the numbers of trainees who answered a question. *$P<0.0001$

**Table 2. Quality of careers advice from a variety of sources**

| Source of careers advice | No of foundation trainees giving a response to source | No (percentage) of foundation trainees receiving information from this source | Mean score for quality of advice | Standard deviation of score |
|---|---|---|---|---|
| Other sources | 508 | 13 (3%) | 3.88 | 1.15 |
| Informal | 498 | 464 (93%) | 3.74 | 0.90 |
| Educational supervisors | 499 | 333 (67%) | 3.65 | 0.84 |
| Postgraduate clinical tutors | 500 | 273 (55%) | 3.48 | 0.93 |
| National careers body | 488 | 208 (43%) | 3.29 | 0.86 |
| Careers fair | 481 | 131 (27%) | 3.19 | 0.90 |
| Books/leaflets | 498 | 225 (45%) | 3.18 | 0.83 |
| Medical school | 497 | 25 (51%) | 3.08 | 0.89 |
| Royal college tutors | 508 | 109 (22%) | 3.06 | 1.18 |
| MMC deans | 486 | 107 (22%) | 3.03 | 0.90 |

MMC = Modernising Medical Careers

(6%) had no preference. The three most popular specialties were medicine and general practice, each selected by 22% of trainees (105 and 104 respectively), followed by surgery (16% of trainees; 75) (*Figure 2*). Specialties that have traditionally been difficult to recruit to were still the least popular among respondents (public health medicine (0.8%), pathology (1.2%) and psychiatry (1.6%)).

## Gender differences

There was no significant difference in careers advice from any source for male and female trainees ($P>0.05$). There were some notable differences in specialty choices between male and female respondents (*Figure 2*). Nearly three times as many male foundation trainees (79) were interested in pursuing a career in medicine compared to female trainees (79:29). Approximately twice as many male than female foundation trainees were interested in pursuing a career in surgery (51:22) and anaesthetics (21:9). Paediatrics and obstetrics and gynaecology were three times more popular with female trainees (female to male ratio 20:6 and 13:3 respectively). More female respondents were interested in pursuing a career in general practice (female:male 59:44)

## Differences between the career aspirations of F1 and F2 doctors

Similar percentage of trainees in F1 as F2 wished to pursue a career in general practice (23% (56/245) and 22% (45/206) respectively). There was a larger proportion of F1 (26/245; 11%) than F2 (6/206; 3%) trainees who do not know which specialty they are most interested in pursuing a career in.

## Differences in career aspirations depending on place of qualification

The top three specialties were medicine, surgery and general practice irrespective of medical school of qualification. Medicine was more popular with overseas doctors (45%) compared to UK trainees (15%) whereas general practice was more popular with UK doctors (26%) than those who had qualified overseas (15%). A career in surgery was equally popular among UK and overseas graduates (17%).

## Other information

Knowledge of MMC is shown in *Figure 3*, themes about careers advice which emerged from the free-text comments in *Table 3* and information that trainees would like to see at a careers fair in *Table 4*.

***Figure 3. Knowledge of Modernising Medical Careers (MMC).***

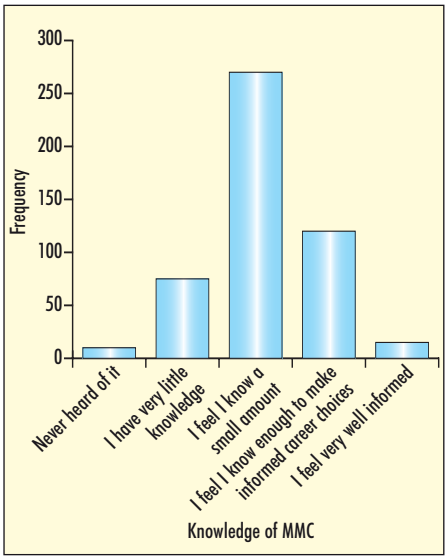


***Figure 1. Place of qualification of foundation year 1 (F1) and foundation year 2 (F2) doctors.***

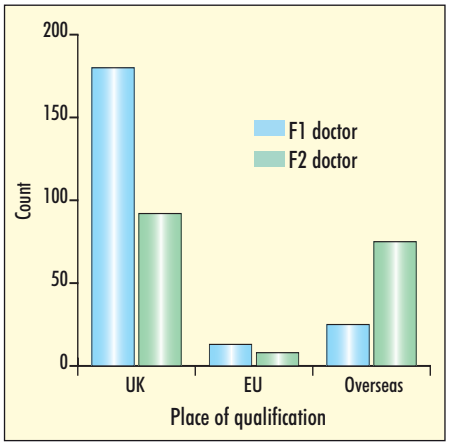


***Figure 2. Specialty most interested in by gender.***

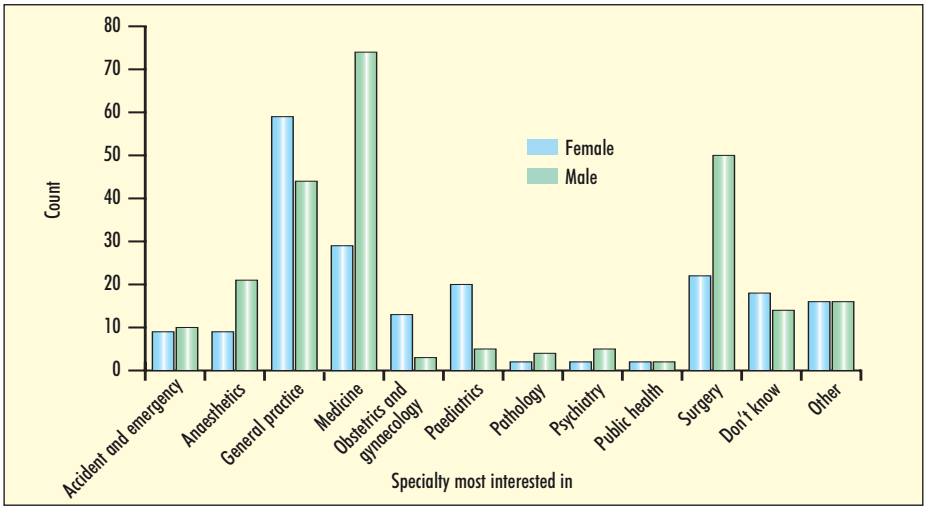

**Table 3. Themes about careers advice which emerged from free-text comments**

**1. Clear information on MMC**

'Definite answers as to what will be implemented between now and 2007'

'I wish someone knew something about MMC and how it will affect and be integrated with current posts as no-one (not even clinical tutors/college tutors) know any certainties about the scheme'

**2. Trainees wished to have specialty information**

'Clearly explain experience necessary for each specialty and career path for different specialties'

'If we could be given any information about how the future careers might run'

'For those of us who have a specific career in mind it would be useful to have specific session in paediatrics, psychiatry, GP, surgery, medicine and to identify a doctor who could act as a career mentor'

**3. Foundation trainees were concerned about their future**

'It would be useful if we knew what we need to do after finishing F2 and before August 07 (basic surgical and medical training)'

'If we knew where we may be in a year's time as F2 doctors it could help us to plan ahead, but at the moment most of us don't even know if we could be employed at other hospital next year as a likely option'

**4. They also wanted advice on how to deal with the uncertainties of MMC**

'How it will affect me in my training. What changes will come about compared to the present system. What jobs will be available and when'

'I think at the moment the problem is that there is a new system being put into place and nobody seems to know what is happening. It is hard to plan a career when you don't even know how to apply for F2 posts'

F2 = foundation year 2; MMC = Modernising Medical Careers

## Discussion

### Careers advice

This survey of careers advice for foundation doctors shows although trainees received advice from a variety of sources, there is urgent need for input in this area. This is in agreement with other published report including the General Medical Council's survey of 3000 graduate doctors in which 54% of F1 trainees and 9% of F2 trainees received any careers advice (GfK NOP, 2006). Although in the current questionnaire 67% of trainees received careers advice from educational supervisors further improvement is needed. The MMC guidance on careers management with its 14-point delivery model is to be welcomed as this outlines careers management for medical schools, deaneries, Royal colleges and trusts (Department of Health, 2005c). Its aim is to have a proactive and educational approach to careers management and a joined up approach between all those involved.

**Table 4. Trainees' opinions on what would be helpful at a careers fair**

| | No (%) of trainees wishing this to be included in a careers fair |
|---|---|
| Specialty stands | 442 (87%) |
| Workshops on writing CVs/ application forms | 427 (84%) |
| Workshops on interview preparation and technique | 419 (82%) |
| Lectures on MMC | 341 (67%) |
| Workshops on choosing a F2 rotation | 338 (67%) |
| Workshops on the process of obtaining work abroad | 335 (66%) |
| Workshops on flexible careers | 315 (62%) |
| Workshops on flexible training | 296 (58%) |
| Workshops on overseas doctors | 240 (47%) |

Total trainees = 508. F2 = foundation year 2; MMC = Modernising Medical Careers

Informal careers advice was the source used by the highest number of foundation trainees and was given the second highest rating. It is well documented that trainees traditionally do not use formal channels of advice (Chambers et al, 2000; Jackson et al, 2004). All sources had a mean score indicating usefulness in contrast to widespread dissatisfaction with careers advice previously reported (MacDonald and Easton, 2003).

Traditionally, medical careers advice has been provided by doctors. This approach is evident from the types of careers advice that trainees have indicated as having been most useful with educational supervisors and postgraduate tutors in the top four sources. In future, however, the MMC operational framework states that those who provide career advice and coaching are to be trained appropriately and it will not be sufficient for educational supervisors to offer informal careers advice (Department of Health, 2005b). An unbiased opinion will be needed. Funding has been made available for each deanery to have a careers adviser in 2005/6 and each foundation school from 2006 onwards (NHS Employers, 2005). A pilot study by Davison et al (2006) showed the success of an impartial trained careers advisor for junior doctors. Access to impartial career advice from appropriately trained professionals was raised as an important issue in the BMA report of 2004 (British Medical Association, 2004a).

### Specialty choice

It is interesting to note the difference between this group of foundation trainees and the BMA 1995 cohort of medical graduates with regard to an interest in general practice (BMA, 2005). Fifteen per cent of the BMA 1995 cohort wished to enter general practice 1 year after graduation and 19% of the cohort 2 years after graduation. Twenty three per cent of foundation trainees chose general practice as their preferred specialty which is similar to figures from a London study (Stern, 2005).

This difference could be attributed to the fact that general practice has now been introduced into the undergraduate curriculum from the first year of medical school in the UK. Consequently, medical students are now gaining more exposure to general practice than ever before and are therefore in a better position to make an early decision on whether or not this is the specialty that they wish to pursue in their career. Birmingham graduates have been noted as expressing a higher interest in a career in general practice (Goldacre et al, 2004). An alternative explanation is that the new GP contract with better pay for less hours of work and no need to do out of hours working is attractive, and GPs early in their career have shown more satisfaction with time available for leisure compared to hospital doctors (Lambert et al, 2002).

The career aims of male and female foundation trainees differed. In general, specialty choices of newly qualified doctors do not seem to have changed dramatically in recent years (Lambert et al, 2003a). The main change is that male

foundation trainees in the authors' deanery are more interested in pursuing a career in medicine than surgery in contrast to trends suggested by Lambert et al (2003b) in their career choices paper. Female foundation trainees in the current survey showed similar preferences to those described by Lambert et al (2003b).

Choice of specialty was unknown by 6% of foundation trainees. This is a similar figure to that obtained in other studies (Petrides and McManus, 2004; Grant et al, 2005). It is important to note, however, that refinement of that choice into a specific area, e.g. the many specialties within general medicine, is needed and a variety of tools can be helpful in this process (Petrides and McManus, 2004; Binding and Loveland, 2005; Grant et al, 2005). Uncertainties surrounding the changes in postgraduate medical training as part of MMC may be contributing to trainees' lack of specialty choice. It is important that those undecided on specialty are given advice by trained impartial careers advisors with use of the career planning tools. The low number of foundation trainees wishing to follow a career in shortage specialties is of concern. Previous studies have highlighted the need for recruitment to increase to these specialties and early career advice and support has been seen as important in this process (Mahoney et al, 2004; Lambert et al, 2006).

The career aspirations of UK, European Union and overseas doctors were the same for the top three specialties but differed in the ranking of them. Possible reasons include differences in medical school curriculum content and in specialty exposure. 68% of respondents qualified in 2004 or 2005. Foundation years training is for doctors in the first 2 years after medical school if UK trained. As the F2 posts were pilot posts, the number of overseas doctors at 41% was much higher than will be seen in the future especially in light of recent changes of immigration policy in the UK (O'Dowd, 2006).

### Careers information and advice

When establishing careers services for junior doctors, it is important to remember all the differences noted in this study. There are many different groups who will access the service who have a wide range of career aspirations and are from a variety of backgrounds. The importance of all doctors needing support in their careers choices has been highlighted including doctors from ethnic minorities and doctors with disabilities (BMA, 2004b). Careers advisers will need to have the skills to explore the reasons behind these differences and aspirations and also have enough up to date knowledge of the medical training structure and regulations within the UK to advise and guide them accordingly.

Despite information being freely available on websites, e.g. the MMC website, only around half the trainees had viewed this particular source. Assumptions cannot be made therefore when giving careers advice that trainees are up to date with recent developments. Careers information giving and advice needs to be an integral part of foundation programme teaching with a planned and structured careers programme for all foundation schools. Career self-management is also important (Chambers and Mohanna, 2006). A route map to aid career planning has been suggested with four stages, namely self-assessment, career exploration, decision making and implementation (Elton, 2006).

At a time when junior doctor training is changing and there is uncertainty about run through specialty training, it is to be expected that trainees wish to gain as much information as possible in order to have the best chance of being successfully appointed to their chosen specialty. Application is now an online national process via the Medical Training Application Service (MTAS) and selection criteria vary according to level of entry and specialty. Unless trainees have kept abreast of these changes and read MMC updates then they are likely to be disadvantaged in the recruitment process.

## Conclusions

This study was carried out in January 2006 after the 2-year foundation programme was introduced in August 2005 for all UK graduates but before recruitment to specialty training posts which start in August 2007. A number of careers management initiatives are planned. These initiatives must include helping trainees to look at quality of life issues as in the past doctors change from wishing to follow medical and surgical specialties later in training for these reasons (Lambert et al, 2003). It will be important to repeat this study in a few years time to see if foundation trainees feel better informed regarding career choices. **BJHM**

*Conflict of interest: none.*


Binding C, Loveland M (2005) Career choice: your future on the cards. *BMJ Career Focus* **331:** 197–9

British Medical Association (2004a) *Sign-posting Medical Careers for Doctors.* British Medical Association, London

British Medical Association (2004b) *Career barriers in medicine: doctors' experiences.* British Medical Association, London

British Medical Association (2005) *BMA Cohort Study of 1995 medical graduates.* Tenth Report. British Medical Association, London

Chambers R, Mohanna K, Field S (2000) *Opportunities and options in medical careers.* Radcliffe Medical Press, Abingdon

Chambers R, Mohanna K (2006) Career self-management: career planning for doctors. In: Chambers R, Mohanna K, Thornett A, Field S, eds. *Guiding Doctors in managing their careers: a toolkit for tutors, trainers, mentors and appraisers.* Radcliffe Publishing, Abingdon

Coffey A, Atkinson P (1996) *Making Sense of Qualitative Data.* Sage Publications Inc, Thousand Oaks, California

Davison I, Burke S, Bullock A, Brown C, Campbell C, Field S (2006) Evaluation of a pilot careers advice service for junior doctors. *Med Teach* **28:** 561–3

Department of Health (2004) *Modernising Medical Careers – The next steps. The future shape of foundation, specialist and general practice training programmes.* Department of Health, London

Department of Health (2005a) *Curriculum for the foundation years in postgraduate education and training.* Department of Health, London

Department of Health (2005b) *Operational framework for foundation training.* Department of Health, London

Department of Health (2005c) *Career Management: An approach for medical schools, deaneries, royal colleges and trusts.* HMSO, Norwich

Elton C (2006) Giving careers advice part two: a structured approach to career planning. *Hospital Doctor* **April 6:** 42

GfK NOP (2006) *Survey of UK Graduate Doctors January 2006. A research report for the General Medical Council.* GfK NOP, London

Goldacre MJ, Turner G, Lambert TW (2004) Variation by medical school in careers choices of UK graduates of 1999 and 2000. *Med Educ* **38:** 230–1


## KEY POINTS

- Trainees seek careers advice from a variety of sources
- There are differences by gender in a trainee's specialty choice.
- Career aspirations differ between foundation year 1 and foundation year 2 trainees and according to medical school of qualification.
- Website resources on careers are not used by some trainees
- Targeted careers advice is needed for trainees to complement the wealth of information available from a variety of other sources.

Grant J, Chambers K, Maxted M, Owen H (2005) *Modernising Medical Careers. Identification of career intentions as a function of Foundation programme experience.* The Open University Centre for Education in Medicine, Milton Keynes
Jackson C, Ball J, Hirsh W, Kidd JM (2004) *Informed choices: the need for careers advice in medical training.* National Institute for Careers Education and Counselling, Cambridge
Lambert TW, Evans J, Goldacre MJ (2002) Recruitment of UK-trained doctors into general practice: findings from national cohort studies. *Br J Gen Pract* **52:** 364–7
Lambert TW, Davidson JM, Evans J, Goldacre MJ (2003a) Doctors reasons for rejecting initial choices of specialties as long-term careers. *Med Educ* **37:** 312–18
Lambert TW, Goldacre MJ, Turner G (2003b) Career choices of United Kingdom medical graduates of 1999 and 2000: questionnaire surveys. *BMJ* **326:** 194–5
Lambert TW, Goldacre MJ, Turner G, Domizio P, Du Boulay C (2006) Career choices for pathology: national surveys of graduates of 1974-2002 from UK medical schools. *J Pathol* **208:** 446–52
MacDonald R, Easton G (2003) Impartial careers advice for doctors and medical students. *BMJ* **326:** 1225–6
Mahoney R, Katona C, McParland M, Noble L, Livingston G (2004) Shortage specialties: changes in careers intentions from medical student to newly qualified doctor. *Med Teach* **26:** 650–4
NHS Employers (2005) *Modernising Medical Careers: the Foundation Programmes.* NHS Employers, London
O'Dowd A (2006) Non-European Doctors feel penalised by change in UK policy. *BMJ* **332:** 744
Petrides KV, McManus IC (2004) Mapping medical careers: Questionnaire assessment of career preferences in medical school applicants and final-year students. *BMC Med Educ* **4:** 18
Stern C (2005) Career intentions of pre-registration house officers and the influence of career advice. *Br J Hosp Med* **66:** 477–9



# Spontaneous uterine artery rupture in pregnancy

## Introduction

This article presents an unusual case of a patient who collapsed when 31 weeks pregnant from a spontaneous rupture of the uterine artery. It is an extremely rare complication of pregnancy leading to massive haemoperitoneum, shock and collapse.

## Discussion

Spontaneous utero-ovarian vessel rupture is a rare cause of obstetric shock. While there have been many cases of utero-ovarian vein rupture, a literature search revealed only nine reported cases of uterine artery rupture in pregnancy. The aetiology is unknown. Arteriovenous malformations, aneurysms, degeneration, trauma or potentially traumatic stimulus, or collagen disorders may be responsible. These changes may be related to haemodynamic and hormonal factors. The haemodynamic changes arising from increases in cardiac output, stroke volume and peripheral resistance result in blood pressure fluctuations and redistribution of flow which can induce structural defects (Ginsburg et al, 1987). Structural changes in the intima and media of the arterial wall seen during pregnancy are similar to changes noted with the use of the combined pill, hence the suggestion that oestrogen and progesterone have a role to play (Barrett et al, 1982).

Typically, there is sudden onset of abdominal pain with signs of hypovolaemia, shock and acute abdomen. The differential diagnosis includes uterine rupture, placental abruption, hepatic or splenic injury, or rupture of aneurysms but the correct diagnosis is rarely made before laparotomy. Caesarean section may be required but the possibility of avoiding caesarean section in very preterm pregnancies with no fetal distress or placental abruption should be borne in mind (Achanna and Goh, 2003). The patient in this case had a caesarean section scar, hence uterine rupture was a possibility, but uterine artery rupture has been reported in women without a scarred uterus (Achanna and Goh, 2003) and can also co-exist with placental abruption. BJHM

## Case Report

A 24-year-old Asian woman booked at 12 weeks' gestational age. This was her third pregnancy having had one caesarean section for fetal distress followed by a normal vaginal delivery with both babies normal. Mid-trimester anomaly scan showed marked curvature of the fetal lower thoracic/lumbar region, one hemivertebrae, clenched fetal hands and polyhydramnios. Amniocentesis revealed a normal karyotype. The procedure itself went perfectly well with no evidence of trauma. The woman opted to continue with the pregnancy after detailed explanation of the structural abnormalities. A repeat scan at 28 weeks showed persistent polyhydramnios and confirmed the above findings.

She was admitted at 31 weeks' gestational age after having collapsed at home with a history of abdominal pain which worsened progressively over a 7-hour period. There was no vaginal bleeding, and no history of trauma or domestic violence. Examination revealed an acutely distressed woman with a blood pressure of 59/40 mmHg and a pulse of 110/minute. The abdomen was distended, tense and tender. The cervix was uneffaced, long, with a closed os. The cardiotocographic tracing showed repeated unprovoked decelerations. The initial impression was that of a concealed placental abruption. She was actively resuscitated and a decision made to proceed to surgery. At laparotomy there was 2 litres at haemoperitoneum. There was no pathology involving the liver or spleen. The previous caesarean section scar was intact, and the bleeding was coming from a branch of the left uterine artery. A lower segment caesarean section was carried out and a live female baby was delivered. The bleeding vessel was ligated once the ureter was identified. Her haemoglobin was 7 g/dl and four units of blood were transfused. The baby had multiple abnormalities and died within 2 hours of birth. Post-mortem was declined. The mother made an uneventful recovery.

Achanna KS, Goh CS (2003) Uterine artery bleeding and haemoperitoneum during the second trimester in pregnancy. *Med J Malaysia* **58**(1): 128–30
Barrett JM, Van Hooydonk JE, Boehm FH (1982) Pregnancy related rupture of arterial aneurysms. *Obstetr Gynecol Surv* **37:** 557–66
Ginsburg KA, Valdes C, Schnider G (1987) Spontaneous utero-ovarian vessel rupture during pregnancy: three case reports and review of the literature. *Obstet Gynecol* **69:** 474–6

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