according to the number of umbilical vessels in the infant. In all, 1580 women with an infant who had a single umbilical artery gave information about smoking.

Numbers (percentages) of infants with single umbilical artery and with three vessels by maternal smoking habit (twins and infants with chromosomal anomalies are excluded)

Umbilical vessels	Maternal smoking (cigarettes/day)			Total
	0	<10	>10	
Single umbilical artery	973 (61.6)	370 (23.4)	237 (15.0)	1580
Three vessels	235 976 (69.7)	62 525 (18.5)	39 851 (11.8)	338 352
Crude odds ratio*		1.44	1.44	

*Unadjusted for maternal age and parity.

To study whether the increased number of infants with a single umbilical artery among women who smoked was due to an abnormal distribution of maternal age and parity,¹ an odds ratio was calculated for single umbilical artery in infants of such women after stratification for maternal age and parity. The odds ratio was 1.46 with a 95% confidence interval of 1.31 to 1.61, and no difference was found between the two groups of smokers.

Birth weight was low (<2500 g) in 191 out of 1674 infants with a single umbilical artery for whom the weight was known.¹ After stratification for age and parity, the expected number was 62.1 and after stratification for smoking as well 71.4. A birth weight

below 1500 g was found in 45 infants in this study. The expected number was 9.9 after stratification for age and parity and 11.6 after stratification for smoking as well. This means that maternal smoking contributes only to a minor extent to the low birth weight of infants with a single umbilical artery.

Comment

Published reports show a close association between tobacco smoking and the development of arterial diseases. Asmussen and Kjeldsen found pronounced degenerative changes in the endothelium of umbilical arteries in newborn infants of women who smoked. I found a significant association between smoking in women and the occurrence of single umbilical artery in their infants. As far as I know it has not been reported before; the only published study I could find that associated smoking with a single umbilical artery had an inadequate control group.³

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An implantable device for long term venous access in chronic lung conditions

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Patients with chronic lung diseases often require intravenous antibiotics over long periods. Thromboses may occur in peripheral veins. Tunnelled, external catheters facilitate venous access but need regular dressing, have a high rate of septic complications, and have detrimental effects on the patient's lifestyle.¹ We therefore examined a totally implantable, plastic device (Intraport, Fresenius).

Patients, methods, and results

The Intraport device comprises a lightweight plastic infusion chamber (35 mm diameter×14.8 mm high) with a self sealing silicone membrane attached to a 2.5 mm diameter silicone catheter (figure). The membrane withstands at least 2000 punctures with an atraumatic needle (Huber). The port is inserted under local anaesthesia through a single incision over the deltopectoral groove. The cephalic vein is identified. A subcutaneous pocket is created in the anterior chest wall at a site previously chosen by the patient. The device is flushed with heparinised saline. The catheter is cut to length and advanced until its tip lies in the superior vena cava. The reservoir is positioned in the pocket and the skin incision sutured.

We have inserted 13 of these catheters in 12 patients aged 16 to 64 (five men, seven women). Ten patients had cystic fibrosis, one aspergillosis, and one chronic bronchiectasis. No perioperative or early complications developed. One patient died four months after insertion from progression of respiratory disease. One port occluded, owing to the inexperience of the staff,

Dimensions of plastic implantable port providing long term venous access

while the patient was in hospital; the blockage was successfully treated by dissolution. Another catheter failed, and radiography showed coiling in the subcutaneous pocket, the tip lying outside the vein; the device was replaced. Eleven catheters were functioning well between 12 and 30 months after insertion, the median duration being 18 months. No episodes of sepsis at the site of the catheter occurred.

Comment

The demand for long term venous access is rising and indications are widening. Subcutaneous implantable systems have been used to give chemotherapy for cancer and in patients requiring parenteral nutrition. Patients are often immunocompromised, and sepsis at the site of the catheter remains a problem and leads to premature removal of the catheter. The demand for implantable ports has come particularly from patients. Cosmetically such parts are far superior to external systems as dressings are unnecessary. The catheter is less prone to damage and cannot be accidentally removed. The one failure of a catheter among our

patients was almost certainly due to twiddler's syndrome²—that is, manipulation by the patient.

Cassey *et al* and Ball *et al* reported the use of a metal port in similar patients to ours and found a high incidence of problems including venous thrombosis, occlusion of the catheter, and detachment or fracture of the catheter.^{3,4} Cassey *et al* suggested that these ports should be used only in inpatients because of septic complications. Our only case of reversible occlusion of the catheter occurred while the patient was in hospital. Thrombosis of the catheters was avoided by flushing them after use and regular monthly flushing with heparinised saline (10 U/ml) when they were not in use. No cases of sepsis occurred despite self treatment at home. We attribute this to careful selection of the patients and training and to the nature of the infused fluid (antibiotics rather than nutrition or chemotherapy). A comparative study of different devices is required.

The plastic implantable port is cheaper than alter-

native metal ports but more expensive than external silicone catheters, this being offset by the reduction in aftercare necessary and the lack of septic complications. We therefore recommend the use of the plastic implantable port in patients requiring intermittent but long term treatment with parenteral antibiotics. It is simple to insert and use, has a low rate of complications, is relatively cheap, and is cosmetically preferable to the patient.

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Unequal pupil size in patients with unilateral red eye

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In general practice a red eye presents diagnostic difficulty. Identification of eyes requiring ophthalmic supervision may be based on several symptoms and signs, such as the rate of onset, presence of pain and ocular discharge, corneal clarity, and visual loss.¹ Pupillary constriction (miosis) is an accepted accompaniment of intraocular inflammation and also forms part of the ocular response to injury. Using methods readily available in general practice, we measured the incidence of clinically detectable anisocoria (unequal pupillary size) in patients with unilateral red eye.

Patients, methods, and results

Patients consecutively presenting to the accident and emergency department of this hospital with unilateral red eye had one of eight main diagnoses (table). A single observer assessed pupil diameters (to the nearest 0.5 mm during distance fixation) on a half pupil scale. Room illumination was of moderate intensity (about 1000 lux). An ophthalmic history was taken and examination performed.

Continuous variables were compared by analysis of variance and two tailed unpaired Student *t* tests. Absolute frequencies were compared by the χ^2 statistic and deviations from random probability (proportion) assessed with the binomial theory approximated to the standardised normal deviate.²

The average age in the eight diagnostic groups was different ($F=4.92$; $p<0.001$) and the sex distribution varied somewhat. The table shows the number of

patients with and the degree of anisocoria. When only the patients with anisocoria were considered the proportion with miosis on the affected side (red eye smaller anisocoria) was significantly different from random for marginal keratitis (9/10 patients, $p<0.03$), acute anterior uveitis (22/24 patients, $p<0.0002$), and corneal abrasion (20/21 patients, $p<0.0001$). In 7% of patients with mild eye conditions the pupil of the red eye was smaller by 0.5 mm or more compared with 39% of patients with serious eye diseases ($\chi^2=49.2$, $p<0.0001$). The proportions were also significantly different when the red eye pupil was smaller by 1 mm or more (table; $\chi^2=22.0$, $p<0.0001$).

Comment

A population sample drawn from an ophthalmic accident and emergency department might be biased towards more severe, more protracted, or partially treated eye diseases. Similarly, variability in measurement and the use of a single skilled observer could bias the results—albeit in a fashion likely to reduce the chances of incorrect conclusion. In this study neither the reproducibility of measurement nor the applicability to general practice has been examined.

Variations in age and sex distribution between the diagnostic groups were comparatively small. Though adult pupil size decreases with age³ and the mean ages differ between the eight groups (table), these factors should not influence deductions based on our results as we compared affected pupils with their fellows—that is, we measured anisocoria. Similarly, the fact that clinically detectable physiological anisocoria may occur in 20% of adults⁴ should be randomly distributed in our sample and should not therefore invalidate our conclusions.

In nearly 40% of patients with serious eye diseases but only 7% with mild diseases the red eye was smaller

Clinical details of patients presenting with unilateral red eye

Diagnosis	No of patients		Age (years)		No of patients with difference in pupillary diameters (mm)*								Proportion (%) of patients with red eye smaller anisocoria (mm)			Severity of ophthalmic disease	
	Male (n=207)	Female (n=110)	Mean (SD)	Range	3-0 (n=1)	2-5 (n=5)	2-0 (n=5)	1-5 (n=23)	1-0 (n=36)	0-5 (n=237)	-0-5 (n=5)	-1-0 (n=5)	Total	≥0-5	≥1-0		
Subconjunctival haemorrhage	16	7	53.6 (17.9)	19-84						21	1	1	0/23	11/167 (7)	5/167 (3)	Mild, with lower morbidity	
Conjunctivitis	75	56	36.3 (14.7)	9-70					5	6	117	1	2				11/131 (9)
Episcleritis	6	7	37.6 (13.7)	23-67							13						0/13
Corneal foreign body	15	1	38.8 (10.3)	23-59				1	3	11	1		4/16 (25)	59/150 (39)	29/150 (19)	Serious with higher morbidity	
Corneal abrasion	35	16	37.0 (11.5)	16-62	1	2		6	11	30		1	20/51 (40)				
Marginal keratitis	21	10	44.4 (14.5)	19-69			1	3	5	21			9/31 (30)				
Herpes simplex keratitis	8	0	36.8 (16.3)	20-60				2		2	4		4/8 (50)				
Acute anterior uveitis	31	13	41.8 (16.8)	19-79		2	3	8	9	20	2		22/44 (50)				

*Unaffected—red eye.