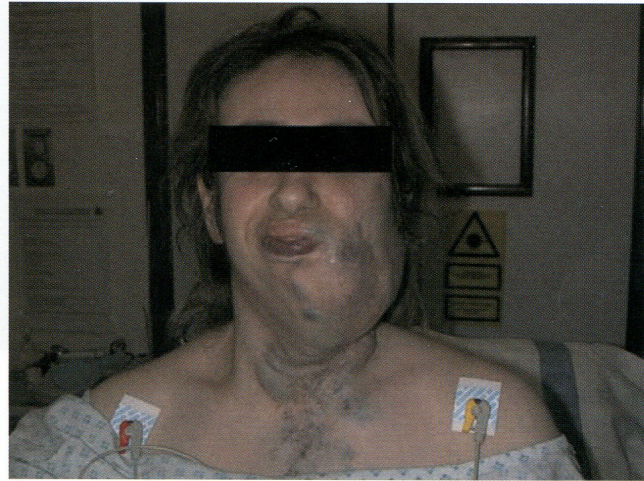


# DIFFICULT AIRWAY SOCIETY

Issue 12

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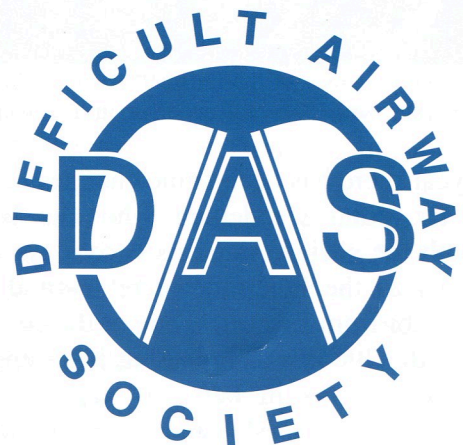
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## **INSIDE THIS ISSUE**

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# News

Welcome to another edition of the Difficult Airway Society newsletter in this our 10<sup>th</sup> Anniversary year. It seems only yesterday that a young impressionable registrar at Guy's Hospital (me), thought it would be a good idea to attend the first meeting organised by a fledgling society calling itself the Difficult Airway Society.

Dr's Pearce, Vaughan and Calder had dreamt up the idea, by all accounts on a train on the back of a beer mat (the good old days). Since that first meeting in 1995 the Society has grown to its current membership of over 1,000 and the annual meetings are firmly set in the social calendar.

as ever our Chairman and Dr. Chris Frerk retains his fiscal skills in the Treasurers role.



Dr Chris Frerk, Dr Mary Mushambi, Dr John Henderson and Dr Mansukh Popat at the annual Difficult Airway Society meeting in Leicester

So, what else has happened in the last year, well, the Society has come up with some airway guidelines, which you should have all received, in laminated forms. Various research projects have been supported (see Research News) and planning for the 10<sup>th</sup> anniversary annual meeting is going well. The 10<sup>th</sup> anniversary meeting if you haven't already heard is in Lille and I have it on good authority that the champagne, wine and food are certainly up to the mark. If you are a regular at the DAS annual meetings, this promises to be a special event and if you are a DAS virgin what better way to be introduced. See you in Lille!

## Newsletter

This newsletter was written by members of the Difficult Airway Society. The Opinions expressed are those of the individual members and do not represent necessarily the views of the society.

Any feed-back on this Newsletter, submissions for future editions or correspondence should be sent to;

Dr Anil Patel  
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Royal National Throat Nose & Ear Hospital  
330 Grays Inn Road, London WC1X 8DA  
anil.patel@royalfree.nhs.uk



Dr Perihan Ali co organiser of the Difficult Airway Society meeting in Leicester with Dr John Henderson in full swing

In the last year there has been some changes at the top table. Dr. John Henderson who has been involved with the society since its early days has stepped down as the honorary secretary and Dr Mary Mushambi from Leicester, one of the co-organisers of the 2004 DAS Leicester, has stepped in. So congratulations in her new role as our honorary secretary. Dr. Mansukh Popat remains

**DAS 2004 Leicester**  
**24<sup>th</sup> – 26<sup>th</sup> November 2004**

**Difficult Airway Society Annual  
Scientific Meeting at Leicester City  
Football Club Walkers Stadium and  
Leicester Tigers Rugby Club**

**Organisers:**

**Dr Mary Mushambi & Dr Perihan Ali**



**The Organisers**

The DAS organisers for this year's meeting impressed us again with their choice of venue. Thankfully for those of us unable to tell the difference between Rugby and Football there were clear signs directing us to the workshops and the main meeting!

The first day was devoted to workshops, this was a new format for the meeting and proved to be popular with those of us lucky enough to get places. The organisers did well not to be pressured into accepting more delegates as the group sizes were perfect. We rotated through various stations on different aspects of airway management - it was a great opportunity for experienced faculty members to teach small groups with plenty of time for non - threatening practical teaching. We were impressed with the huge range of equipment collected for us and certainly hoped that there were no airway emergencies in Leicester that day!

Having spent most of the morning wondering what a Bullard laryngoscope actually looked like, it was nice to finally see one and have it demonstrated by someone using it on a regular basis. Thank you to Professor Crosby for coming so far to show us! Of particular note was the simulation station with fully interactive models. It was surprising how many of us had never been on a formal simulation course.

The first day of the main meeting started with an introduction from Dr Mary Mushambi who, with the help of Dr Perham Ali, had done a fantastic job organising the event. During the morning, we learnt about the assessment and management of the patient with obstructive sleep apnoea and of the morbidly obese patient. This was followed by the Guest Lecture, a thought provoking presentation by Professor Edward Crosby (University of Ottawa) about our continued reliance on the Macintosh laryngoscope for airway management. He repeated the call for us all to improve our comfort levels with alternative methods. This was reinforced by Dr Popat's presentation highlighting the lack of structured airway training programmes in the UK.

In the afternoon, we learnt about the airway problems of anaesthetising cows with a residual stomach volume of 120 litres whilst being entertained with some extraordinary slides from Paul Crawford, a vet from Co Antrim.

This was followed by presentations of free papers. The huge number of poster displays and the trade stands had to be squeezed in between the talks during refreshment breaks with prizes awarded the following day. Next was a very informative talk by Dr Weiss from Switzerland about the pros and cons of cuffed endotracheal tubes in children,

suggesting that specifically designed cuffed tubes may become the new airway management standard in the future.

The day concluded with the AGM followed by an amazing annual dinner at the National Space Centre where we were treated to a drinks reception in the lobby with the space exhibits, a “space show” and dinner in the main hall. The after dinner speaker was Mary, Queen of Scots in full regalia with some rather scary medical props!

The second day of the meeting started with more poster presentations and free papers. Further talks on fibreoptic training issues followed along with lectures on the medico-legal aspects of difficult airway issues.

In the afternoon we had the surgical perspective with Mr Andrew Moir as chair of a session on percutaneous tracheostomies and cricothyroid airway and jet ventilation for upper airway surgery. These two talks were especially interesting for those of us with no experience of these techniques.

The afternoon ended with a lively discussion of various case histories, one of which saw Dr Chris Frerk repeatedly sued and struck off as the end result of each of his management options!

The meeting concluded with high spirits at the prospect of reconvening in Lille in 2005 in a strategically planned weekend! Look forward to seeing you all there!

## Endpiece:

The evening at the Space centre was great fun; one event that went unannounced at the time was that Dr Wim Smithies, an SpR from Northampton was the only anaesthetist to successfully dock the space in the simulator at the space centre. Dr Smithies attributes this to natural flair and ability (and being relatively sober). Dr Frerk reckons a major contribution to his success was skilfully directed training. Either way don't be surprised if the next astronaut you hear of has spent time in Northampton.

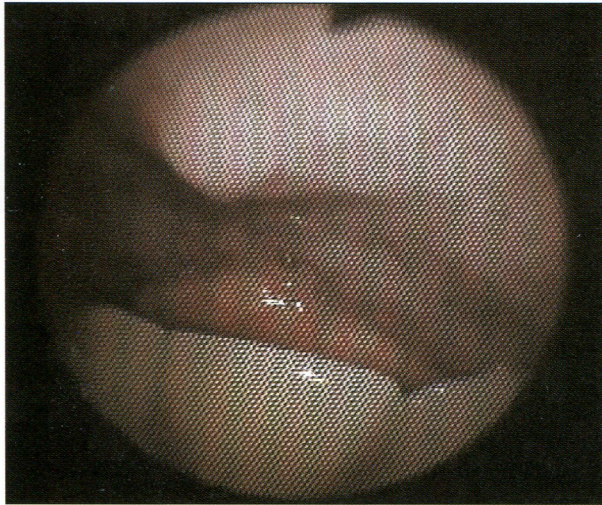


**Dr Rehana Iqbal and Dr Imogen Davies**  
**Specialist Registrars**  
**John Radcliffe Hospital, Oxford**

# Sports Page



## Case Report – 1



False teeth aren't usually a hindrance at intubation. In this case however, a 49yr old man had presented to hospital believing he had swallowed his upper denture asleep. Using a fibreoptic endoscope, the teeth were located in the lower pharynx, firmly wedged over the glottis. The tip of the epiglottis could just be seen, but the patient had other features suggesting difficult direct laryngoscopy, even under optimal conditions!

For safety he was intubated awake via a Fibrescope, which could just be passed over the teeth and into larynx. With his airway secured, the denture was extricated with some difficulty under general anaesthesia.

**Dr Andrew McLeod (Consultant Anaesthetist),  
Mr Simon Dennis (ENT SpR), Portsmouth**

## Case Report – 2 Laryngocoele

A 60 year old woman presented late one evening to A+E in extreme respiratory distress with marked tracheal tug and stridor. A lump the size and shape of a golf ball was palpable in the anterior triangle of the left side of her neck. Her condition deteriorated rapidly, necessitating emergent airway control. The application of CPAP by hand using 100% oxygen via a Bain circuit improved her airway considerably, and a Sevoflurane inhalational induction was commenced. Spontaneous ventilation was maintained until she was considered deep enough to allow laryngoscopy, which revealed an oedematous mass of similar proportions to that palpable in her neck, partially obscuring her glottis. A 6.0mm i.d. cuffed tube was passed with minimal resistance at the first attempt.

It then became known that she was awaiting elective surgery for excision of a laryngocoele, and had recently had a CT scan of her neck, images of which were immediately available. This demonstrated a large bi-lobar cystic mass, comprising supra-glottic and extra-thyroid components (figure 1), with an airway that was reduced to about 3mm internal diameter at cord level (figure 2).

A laryngocoele arises from a sinus situated in the anterior extreme of the vestibule of the larynx. It usually contains air, and may be inflatable on Valsalva manoeuvre (though no more common in glass blowers and players of wind instruments, it is readily demonstrated by those that have it). Cysts may contain fluid, increase in size if infected, and possibly during menses. There is a

risk of soiling the airway if an infected cyst ruptures spontaneously or as a result of laryngoscopy.

Whilst still in A+E, a needle aspiration of the external mass was performed by ENT colleagues, producing 25ml of white cloudy fluid, which did not look infected. Repeat laryngoscopy then revealed an oedematous mass of redundant soft tissue, deflated but still partly obscuring her airway. She remained anaesthetised and was transferred to ITU. After 12 hours of ventilation, Dexamethasone and head-up positioning, her airway was considered by nasendoscopy to be sufficiently less swollen to allow a trial of extubation, which was uncomplicated.

### What would you have done?

Having established a clear airway with CPAP, would you gently attempt to ventilate? Would you administer a muscle relaxant? Do you think awake fiberoptic intubation would have been feasible? The CT images may help ...

### Plan B

Although her cricothyroid membrane was indistinct, tracheal rings were palpable, and trans-tracheal needle and jet ventilation with oral airway would have been feasible if direct laryngoscopy had failed. Awake tracheostomy was considered less favourably given that she was unsafe to move to the operating theatres.

**Dr Shaun Scott, Dr Janet Stansfield, SpR Anaesthesia, Royal Berkshire Hospital, Reading**



Figure 1. Laryngocoele. Axial CT at Hyoid level reveals bilobar mass extending lateral to the thyroid



Figure 2. Concentric narrowing of the airway at glottic level

## 'Breathe Safe' bite block permits active tongue protrusion during awake fibreoptic intubation

When conducting an oral fibreoptic intubation, a common (although not universal) practice is to use one of a variety of oral devices to direct the scope to the glottis and protect it from dental damage. All of the current devices (e.g. the Berman and Ovassapian airways) are placed in the midline and gripped by the patient's incisors. By contrast, the 'Breathe Safe' bite block (Figure 1) (OGM Ltd; [ogm.uk.com](http://ogm.uk.com)) is placed laterally between the molar teeth. It consists of a wedge-shaped inter-molar portion similar to a dental prop and a handle portion which is medially convex and which extends anteriorly and lateral to the corner of the mouth. It is available in three sizes, and is provided in sterile packaging intended for single patient use.

They thereby restrict active extrusion of the tongue by obstructing its passage beneath the device, and limit mouth opening to that which holds the device stable between the teeth. If the view of the glottis is suboptimal through the device, it may worsen if the patient opens their mouth, by destabilising the device. For these reasons, some prefer not to use route guides, but then risk damage to the scope inflicted by the patient's teeth.

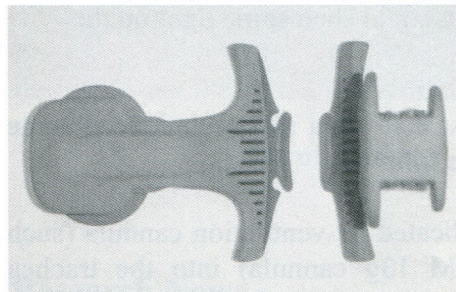


Figure 1. Left, medial convex surface. Right, rear view

Limitations of this device include instability in patients with incomplete molar dentition and difficult or impossible insertion in patients with severely restricted mouth opening

A future version will allow CO<sub>2</sub>-sampling and oxygen administration via Luer-lock ports incorporated within the body of the bite block (personal communication, OGM).

It is well tolerated by patients, and initial experience with its use during awake and asleep fibreoptic intubation has been favourable. It has now been included in the 'Difficult Airway' trolleys in the Royal Berkshire Hospital. A descriptive and comparative study will take place shortly.

**Dr Shaun Scott, SpR Anaesthesia, Royal Berkshire Hospital, Reading**



Figure 2. Left, top and bottom: Bite block inserted between molar teeth. Right: Oral endoscopy

With the 'Breathe Safe' bite block wedged into place between the molar teeth, the patient may then relax their pterygoid muscles without loss of mouth opening. Further mouth opening, jaw and tongue protrusion are unrestricted by the device. The scope may then be introduced either along the medial surface of the bite block or in the midline according to operator preference (Figure 2).

## What's the problem with Transtracheal Jet Ventilation?

Dear Editor

I've heard a few lectures lately (one of them from your good self) suggesting that transtracheal jet ventilation with a Sanders injector is potentially dangerous (and is very dangerous in the potentially obstructed airway) because of the likelihood of barotrauma. I'm confused and wondered if you could shed some light on the matter.

I would suggest that it's a safe technique if some simple rules are followed:

- 1) Place a dedicated jet ventilation cannula (such as the VBM 13g cannula) into the trachea under local anaesthetic (through the cricothyroid membrane or between tracheal rings).
- 2) Confirm it's in the right place with capnography.
- 3) Connect it up to the Sanders injector, set between 2-4 bar for an adult.
- 4) Induce anaesthesia and squeeze the trigger for 1-2 seconds watching the chest rise.
- 5) Let the trigger go and watch the chest fall
- 6) Repeat steps 4 and 5 to your hearts content (*obviously making sure you maintain anaesthesia with propofol or the like*).

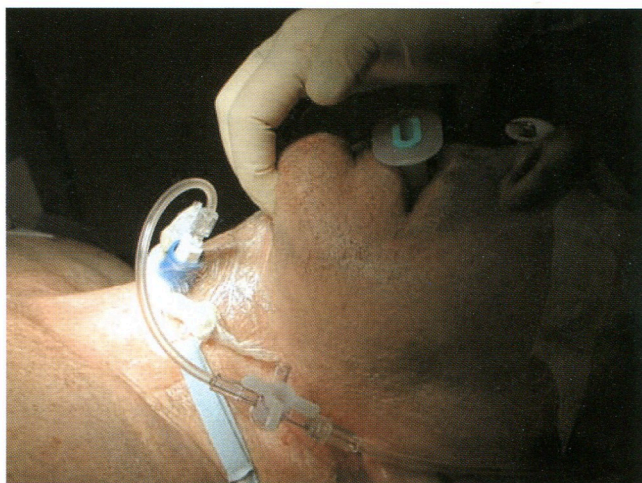
So what's the problem; these cannulae will deliver 200-400 mls/second of oxygen into the trachea under these conditions and airway pressures will surely be just the same as if the same volume of oxygen was delivered into the trachea via a cuffed tube from a Bain circuit (that's what my bench model showed when I tried it).

Even if the upper airway is obstructed completely the first jetted breath will only be 400-600 mls and so the airway pressure will be OK. If the chest won't empty, *surely very unlikely as most obstructions will be inspiratory*, but if no gas at all comes out then don't press the trigger again (the lungs will contain that 600mls of oxygen so the patient won't go hypoxic. When they've used up that oxygen squeeze the trigger again, while you're sorting out a formal tracheostomy).

I accept that if you misplace the cannula you will be able to jet that 600mls per breath into a space where it shouldn't be (but see step 2 above). And I accept that if you held the trigger down continuously for 60 seconds with an obstructed airway you would cause damage - but if you're going to do that sort of thing then you should probably not be allowed out on your own for your own safety.

Now I might have missed something obvious but I can't yet see the problem of Sanders jet ventilation used in this way - You're a bright chap who understands these things, give me the other side of the argument cos I don't want to carry on using this technique if I've got a fundamentally flawed understanding of what I'm doing.

**Chris Frerk**



Transtracheal catheter in place. Maintenance of an upper airway for air entrainment and exit is essential

## Reply

***Fundamentally Chris you are absolutely right in what you say. Squeeze the trigger, watch the lungs go up, stop squeezing and watch the lungs go down. If the lungs do not deflate don't squeeze.***

***Although it sounds simple I think if you have never used manual Sanders jet ventilation***



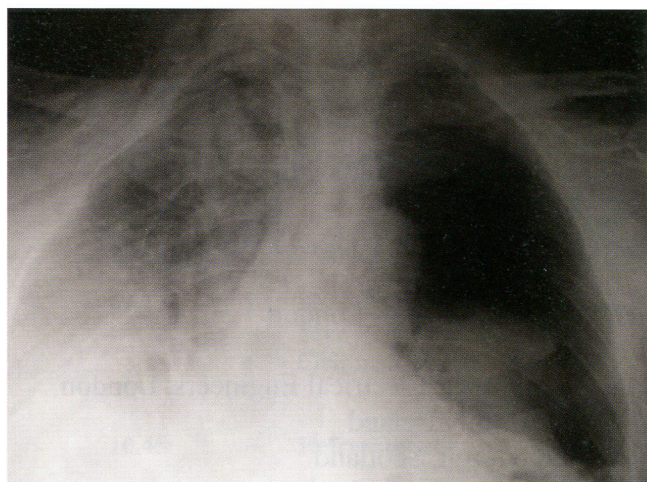
*techniques before there is a lot to take in and observe.*

*The main reason why I think these techniques are potentially so dangerous is that there is no room for error. Just one additional jet of gas in an obstructed airway will cause bilateral (tension) pneumothoraces, pneumomediastinum and massive surgical emphysema.*

*There are only two ways of avoiding this. First, use automated jet ventilators which detect a preset pause pressure and prevent the second jet of gas being delivered. Or, second, have constant vigilance looking at and listening for air entrainment and exit during every lung inflation and deflation. This may not be apparent to the occasional or novice user.*

*In my own practise I have jet ventilated in excess of 1000 patients (only 62 transtracheal though) and I have had 3 cases of severe barotrauma (all fortunately with a good outcome) the first was as an SR when with one additional jet bilateral tension pneumothoraces resulted. The other two cases were with Specialist Registrars (both excellent trainees) in which manual jetting continued despite a blockage of the airway by the surgeon. In all these cases it took only one additional jet to cause severe barotrauma.*

*I think transtracheal jet ventilation is an excellent technique for patients with a compromised airway, and is relatively simple to undertake but it has no room for error.*



**Barotrauma**

## Research News

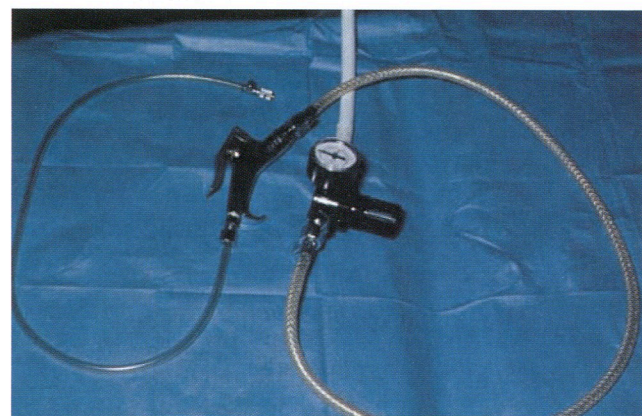
Following a national advertising campaign, two projects have been selected to receive funding from DAS.

Dr John Duggan leads a team from the North East investigating forces at laryngoscopy, DAS is providing part funding for this project to the tune of £12,000. We are optimistic that this work will lead to a much greater understanding of a technique that we use in our day-to-day practice.

Dr Tim Cook from Bath continues his work into supraglottic airway devices. DAS is assisting with the purchase of mannequins and disposables with a contribution of £3,000. We expect this work will help in the evaluation of the plethora of new airway devices arriving on the UK market.

Continuing the supraglottic airway theme, DAS is supporting the development of clinical trials of these devices. We hope to be able to provide the anaesthetic community with reliable data regarding the strengths and weaknesses of the current (and future) range of airway devices.

Any anaesthetist interested in contributing to this work in a multicentre trial is invited to make their willingness known to Chris Frerk via email [treasurer@das.uk.com](mailto:treasurer@das.uk.com)



Finally, if you have a research project on the back burner because of lack of funding then DAS may be able to help you too, for more information contact [treasurer@das.uk.com](mailto:treasurer@das.uk.com)

## DIFFICULT AIRWAY SOCIETY ANNUAL MEETING

LILLE, France

24<sup>th</sup> – 26<sup>th</sup> NOVEMBER 2005

### Past DAS Meetings

1995 Guy's Hospital, London  
1996 Cardiff, Wales  
1997 Institute of Electrical Engineers, London  
1998 Belfast, N Ireland  
1999 Edinburgh, Scotland  
2000 Manchester, England  
2001 Oxford  
2002 Commonwealth Institute, London  
2003 Glasgow, Scotland  
2004 Leicester, England

### 2005 Lille, France

### For the Future

2006 Dublin, Ireland  
2007 Portsmouth  
2008 Liverpool

## Joining the Difficult Airway Society

### Membership

There are two categories of membership. Full membership for anyone medically qualified and registered with the GMC (or similar organisation in another country). Associate membership for non-medical people.

### Subscription

The annual subscription is currently £10 and has been this since 1995. We request that you complete a Standing Order payable in mid-January. There is no specific joining fee.

### Documents

The best way is to download both the membership form and Standing Order, complete both, sign the Standing Order and send both by ordinary post to Dr Mary Mushambi. Membership is not active until the Standing Order is received.

[www@das.uk.com](http://www@das.uk.com)

### Thursday 24<sup>th</sup> November

12.30 -13.25      **Registration and coffee**  
Lille Grand Palais Conference Centre

13.25              **Welcome**  
Dr Mansukh Popat, Chairman of the Society

13.30              **SESSION 1**

**The Obstructed Airway**  
Chairman Dr Adrian Pearce

**Anatomy of the airway and terminology**  
Mr Paul O'Flynn

**Maxillofacial, supraglottic and tongue-base lesions**  
Dr Mansukh Popat

**Laryngeal lesions**  
Dr Anil Patel

**Discussion and case histories**

16.00              **SESSION 2**

**Tracheostomy**  
Chairman Dr Viki Mitchell

**History**  
Dr Adrian Pearce

**Surgical Tracheostomy**  
Mr Steve Watt-Smith

**Problems with Tracheostomy**  
Mr Guri Sandhu

**Discussion**

17.45              **Champagne Reception**

### Friday 25<sup>th</sup> November 2005

09.00              **SESSION 3**

**Free Papers**  
Chairman Dr Chris Frerk

11.0	<b>SESSION 4 Guest Lecture</b>  Representative of the Society for Airway Management  <b>The laryngeal mask and its impact on difficult airway management</b> Dr David Ferson, USA	17.30-18.15	<b>Annual General Meeting</b>
		20.00	<b>Annual Dinner</b>
		<b>Saturday 26<sup>th</sup> November 2005</b>	
12.00	Lunch	09.15	<b>SESSION 7 Free Papers</b> Chairman Dr Jaideep Pandit
13.30	<b>SESSION 5</b> Supraglottic Airway Devices Chairman Dr Anil Patel  <b>Process and recommendations for disposable devices in the UK</b> Dr Tim Cook  <b>What information can be obtained from manikins?</b> Dr Jim Murray  <b>Hurdles and evidence required by the FDA of a new supraglottic device</b> Dr David Ferson  Discussion	10.45	<b>Refreshments</b>
		11.15	<b>SESSION 8 Airway Deaths</b> Chairman Dr Mansukh Popat  <b>A personal experience</b> Dr Richard Plummer, UK  <b>Data from France</b> Professor A Lienhart, Paris  <b>Learning from airway Deaths - experience from Denmark</b> Dr Michael Kristensen Denmark
14.30	<b>Management of the Airway and Trauma</b>  <b>Experience from the United States of America</b> Dr John McGill, USA  <b>Experience from Europe</b> Dr Michael Kristensen, Denmark.	12.30	<b>CLOSE of Meeting</b>
15.30	<b>Refreshments</b>		
16.00	<b>SESSION 6</b> <b>Paediatric Anaesthesia</b> Chairman Professor Renee Krisovic  <b>Newborn laryngeal anatomy and airway assessment consequences</b> Professor Pierre Fayoux, Lille  <b>Foreign body aspiration in childhood: algorithm management</b> Professor Charles Hugo Marquette, Lille  <b>Difficult intubation criteria in childhood</b> Dr Bruno Marciniak, Lille  <b>LMA and amygdalectomy (adenotonsillectomy)</b> Dr Dominique Boisson-Bertrand		





# ***DIFFICULT AIRWAY SOCIETY***

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**10<sup>TH</sup> ANNIVERSARY MEETING OF THE UK AIRWAY  
MANAGEMENT SOCIETY**

**24<sup>TH</sup> - 26<sup>TH</sup> NOVEMBER 2005**

**LILLE, FRANCE**

**VENUE**

**GRAND PALAIS CONFERENCE CENTRE, LILLE**

**FREE PAPERS**

**ABSTRACTS FOR ORAL OR POSTER PRESENTATION**

**400 WORDS, MAXIMUM 3 REFERENCES**

**BY 2<sup>ND</sup> SEPTEMBER 2005**

**[lilleabstract@das.uk.com](mailto:lilleabstract@das.uk.com)**

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