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Ten year performance of Ambulatory Surgery in England

Diez años de actividad de la Cirugía Mayor Ambulatoria en Inglaterra

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ABSTRACT

Introduction: The development of a new cohort of procedures suitable for Ambulatory Surgery has been recently mooted by the International Association of Ambulatory Surgery.This paper describes a ten year audit of performance of such operations in England, calculating rates for admission, treatment and discharge over the same calendar day.

Methods: Data were extrapolated from NHS Digital information for the years 2006-7 to 2016-17, by subtracting emergency operations from the total number of finished consultant episodes, and then calculating the ambulatory surgery rate.

Results: There has been a consistent increase in the rates of ambulatory surgery for the periods evaluated. Procedures can be divided into "mature","rapidly rising" and "low threshold" categories, dependent upon their relative rates.

Conclusion: Retrospective audit of ambulatory surgery performance allows assessment of national status to facilitate further development of the speciality.

Keywords: Ambulatory surgery, performance, England.

INTRODUCTION

Ambulatory Surgery is a pathway of care that offers efficiency, economy, timeliness, with morbidity and mortality rates below that of inpatient management.Appleby (1) cites that the English performance of Day Surgery has saved the National Health Service over two billion pounds in the cost of treating 6.96 million patients, with a further million patients being treated over the next decade for no real increase in spending. In previous years, the International Association for Ambulatory Surgery has attempted to complete international reviews of ambulatory surgery rates to allow comparison between countries.The first of these was carried out for 1994-1995 (2) and included 20 procedures deemed suitable for inclusion (Table I).

The same procedures were considered for 1996-1997 (3), then in the next audit for 2003 (4), Toftgaard considered it appropriate to extend the cohort to 37 procedures as a consequence of the further development of ambulatory surgery, as well as the need to include more surgical specialities in the list (Table II).

Such audit continued for 2009 (5) and for 2011 (6), though, with only six European countries participating.

In 2017, Jackson (7) presented proposals for an updated list of procedures deemed suitable for review of outcome. The proposed list was designed to deal with some of the issues perceived to be limiting the ability of countries to take part, including:

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TABLE I

PROCEDURES FOR AUDIT

Knee Arthroscopy	Extraction of impacted tooth
Cataract Surgery	Inguinal and Femoral Hernia repair
Dilatation and Curettage of uterus	Vein Ligation and stripping
Tonsillectomy with or without adenoidectomy	Myringotomy (with tube insertion)
Squint Surgery	Laparoscopic sterilization
Excision of breast lump	Submucous resection of nose
Anal procedures	Circumcision
Carpal tunnel decompression	Dupuytren's contracture
Vaginal Hysterectomy	Orchidopexy /varicocoele
Removal of bone implant	Laparoscopic Cholecystectomy

TABLE II

ADDITIONAL PROCEDURES

Rhinoplasty	Broncho-Mediastinoscopy
Termination of Pregnancy	Hysterectomy (Laparoscopic Assisted)
Repair of cystocole/rectocoele	Arthroscopic meniscectomy
Repair of deformity of foot	Disc operations
Mastectomy	Laparoscopic antireflux surgery
Haemorrhoidectomy	Male sterilisation
Transurethral resection of prostate	Bilateral breast reduction
Abdominoplasty	Pilonidal cyst excision
Colonoscopy	Removal of colon polyps
Baker's Cyst	

– The ongoing development of ambulatory surgery with translocation of some operations to the outpatient environment.
– Remove vagueness in definition of some previous procedures used.
– Remove procedures that may not be routinely available in some countries, thereby limiting uptake.

Potential operations were classified by surgical speciality, with three procedures listed as specialist surgery (Table III). To test the changes in procedures used for this proposed international comparison data for England were extracted from national datasets for the year April 2016-March 2017, and collated for the previous ten years, to review the performance of ambulatory surgery in this country.

TABLE III

AAS COHORT OF AMBULATORY SURGERY PROCEDURES FOR 2017

Orthopaedic: Knee arthroscopy including meniscectomy, meniscal or other repair; Removal of bone implants (removal of internal fixation from bone / joint excluding K-wires); Bunion operations with or without internal fixation and soft tissue correction; Carpal Tunnel Release; Dupuytren's fasciectomy
General surgery: Laparoscopic Cholecystectomy; Laparoscopic repair of hiatus hernia with anti-reflux procedure (eg fundoplication); Haemorrhoidectomy; Primary inguinal hernia repair
Breast surgery: Wide local excision of breast with or without axillary node biopsy; Mastectomy with or without axillary node biopsy
Urology: Orchidopexy, Endoscopic resection of prostate (TUR) – can include laser surgery; Endoscopic excision of lesion of bladder
Specialist surgery: Hemithyroidectomy; partial thyroidectomy; posterior excision of lumbar disc prolapse including microdiscectomy

METHODS

For each of the procedures specified, cross-checking with the BADS Directory of Procedures (8) facilitated the identification of four digit OPCS codes (version 4.8) for therapeutic operations, from which online databases at NHS Digital were searched for the relevant procedures (9). The information within this datset contains the number of finished consultant episodes, number of emergency procedures, and the number that were conducted as daycases for each financial year. In the UK, daycases are defined as patients who undergo admission for a surgical procedure and are discharged before midnight on the same calendar day.

The daycase percentage was calculated as the total number of daycases divided by the total number of finished consultant episodes less the number of emergency procedures for this operation or:

$$\frac{\text{Annual number of Daycases}}{\text{(Annual number of FCEs – Annual number of Emergencies)}} \times 100$$

NHS Digital datasets from 2013–14 to 2016–17 also contain a number of "zero length" stays. These are episodes where the patient was admitted and discharged on the same

calendar day, but no prior management intent was provided to inform that the patient would be managed on an ambulatory basis. These data were omitted from calculations, recognising that they might undervalue the overall percentage for ambulatory information for these particular years, but would affect the overall consistency of the ten-year cohort that was studied.

RESULTS

Table IV shows the results of the 10-year audit for the relevant ambulatory operations. Overall, there has been a progressive increase in the rate of all procedures, with a number of defining guidelines.

1. "Mature" procedures.These are operations where the baseline figure has been high, and little further progression has been made in the rate of day surgery as a result of co-morbidities in the remaining patient cohort that limit further expansion.
2. "Rapidly rising" procedures, where there has been a generalised acceptance of the feasibility of ambulatory surgery in the operations cited, and there has been a progressive increase in the numbers recorded as day surgery.
3. "Low threshold" operations that have risen slowly from a low baseline for which there is additional opportunity to improve daycase rates, but there may be other constraints that limit uptake to an ambulatory environment.

DISCUSSION

This paper describes what is believed to be the first review of the percentage of ambulatory procedures conducted in one country over a ten-year period. The data demonstrates an increase in all procedures reviewed, with predicted expectations matching reality. There have been a number of developments within the NHS in England that may have influenced progress with the IAAS cohort of procedures, notably, the development of a financially incentivised system where certain procedures (Laparoscopic Cholecystectomy, Inguinal Hernia Repair, Tonsillectomy, Dupuytren's Contracture) have benefitted from an increase in payment if they are carried out as an ambulatory procedure, with pre-confirmed management intent. This means that when patients are admitted, treated and discharged on the same calendar day, and their management is pre-planned as an ambulatory procedure, their care attracts an additional £200-£250 payment to the hospital. (€225-€285, $284-$355). Given that England was the only country in the United Kingdom to implement "Payment by Results", it seemed sensible to limit the audit to this country alone. Similarly, England is the only country that publishes such information on-line in the depth needed to conduct such an audit.

Reference has been made to the three types of procedure with varying ambulatory surgery rates. "Mature" procedures are those for which rates were historically high and reaching a level from which it might be difficult to expand any further. Such examples might have current rates of greater than 90%, for example, cataract extraction with intra-ocular lens insertion (98.4%), squint correction (93.2%) myringotomy (92.1%), carpal tunnel release (97.4%), and Dupuytren's fasciectomy (91.7%). While there might be further improvement in future years, the rate of rise is likely to be small.

The "rapidly rising" procedures are those where the annual rate of rise has been between 1% and 5%, and in due course, might flatten such improvement as they reach their relative maxima. Constraints might be the number of emergency procedures (for example, acute cholecystitis requiring laparoscopic cholecystectomy), the availability of suitable operating slots within the morning or early afternoon to facilitate the recovery of patients undergoing more complex ambulatory procedures, or the absolute number of individual operations requiring treatment, for which available capacity in the ambulatory area might be limited.

The "low threshold" procedures are those with a low or very low baseline, that have increased slowly over the period of audit. Such examples within the IAAS cohort would be laparoscopic assisted abdominal or vaginal hysterectomy, mastectomy, resection of prostate gland with or without the use of laser equipment, and hemithyroidectomy. Mastectomy is a procedure that has been incentivised under the 'Best PracticeTariff' scheme, and has been the subject of a number of meetings arranged by the British Association of Day Surgery (10), as well as the target of work conducted by NHS Improvement (11). Thyroid surgery has previously been of contention as a procedure suitable for daycase surgery. A previous review in 2012 (12) questioned the wisdom of such surgery on the basis of safety, given the risk of post-operative haemorrhage. Wood and McLaren presented a seven year series of 215 thyroid lobectomies in 2015 [13], 194 (90%) of whom were discharged on the same day. The authors made note of their meticulous haemostasis with the combination of diathermy and the harmonic scalpel, avoidance of strap muscle division, resulting in only one patient in the immediate post-operative period requiring re-exploration for a superficial bleeding point.

Where does England stand in comparison with other countries? Recent papers from France (14,15) have described information regarding day surgery performance for 10 surgical procedures, but the studied cohort was a subset of the total number of hospitals in France (15), and the operations studied were different from the proposed IAAS cohort. There seems to have been little other recent information disseminated, with the exception of Belgium (16), where ambulatory surgery rates have been published. The Belgian data provide cross comparisons with other European countries for a number of surgical procedures that have been already alluded to, particularly in relation to laparoscopic cholecystectomy (17). While it is not the role of this

TABLE IV

AMBULATORY PERFORMANCE FOR THE IAAS COHORT IN ENGLAND FROM 2007-08 TO 2016-17

PROCEDURE	2016-2017	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008
Cataract extraction + IOL	98.4%	98.7%	97.5%	97.0%	98.5%	98.3%	98.2%	97.5%	97.2%	95.9%
Correction of squint	93.2%	92.6%	93.1%	93.6%	94.2%	94.4%	93.2%	92.3%	91.3%	91.8%
Myringotomy with or without insertion of tube/suction clearance with tube insertion	92.1%	92.6%	91.2%	91.5%	91.4%	91.3%	89.9%	88.3%	87.6%	86.9%
Tonsillectomy	56.0%	53.9%	50.3%	46.2%	42.8%	37.9%	32.9%	29.9%	26.9%	23.6%
Septorhinoplasty	58.6%	54.3%	49.1%	43.8%	40.9%	37.4%	32.5%	27.2%	24.7%	21.0%
Vaginal hysterectomy including laparoscopic assisted	1.1%	1.3%	0.8%	0.9%	0.6%	0.5%	0.4%	0.3%	0.5%	0.2%
Laparoscopic abdominal hysterectomy	0.7%	0.7%	0.6%	0.3%	0.2%	0.2%	0.2%	0.3%	0.5%	0.2%
Repair of cysto- and rectocoele (anterior and posterior colporrhaphy)	5.1%	4.7%	3.7%	3.0%	2.9%	2.2%	1.7%	1.4%	1.4%	1.1%
Knee arthroscopy including meniscectomy, meniscal or other repair	85.8%	86.1%	79.6%	79.8%	84.5%	83.7%	81.8%	79.5%	76.0%	68.2%
Removal of bone implants (re- moval of internal fixation from bone / joint excluding K-wires)	74.8%	74.4%	72.9%	71.6%	70.8%	69.1%	66.5%	65.0%	63.1%	61.0%
Bunion operations with or with - out internal fixation and soft tissue correction	70.8%	69.1%	63.8%	60.4%	60.5%	57.2%	54.2%	49.0%	45.1%	37.7%
Carpal Tunnel Release	97.4%	97.6%	94.0%	94.3%	97.1%	96.6%	95.9%	95.4%	94.6%	91.8%
Dupuytren's fasciectomy	91.7%	91.0%	86.4%	84.8%	85.5%	81.8%	76.7%	71.9%	69.7%	62.5%
Laparoscopic Cholecystectomy	52.8%	51.3%	47.3%	43.7%	40.2%	35.3%	29.5%	21.7%	18.2%	15.8%
Laparoscopic repair of hiatus hernia with anti-reflux procedure (eg fundoplication)	10.2%	10.2%	7.7%	5.1%	5.4%	3.7%	3.8%	3.9%	4.3%	4.7%
Haemorrhoidectomy	79.0%	77.3%	73.9%	71.7%	70.9%	67.0%	60.5%	56.3%	52.6%	47.9%
Primary inguinal hernia repair	75.4%	74.3%	70.4%	69.0%	70.1%	67.6%	64.0%	61.2%	59.9%	58.2%
Wide local excision of breast with or without axillary node biopsy	64.5%	62.2%	57.3%	55.1%	47.6%	37.4%	27.4%	21.5%	18.3%	13.6%
Mastectomy with or without axillary node biopsy	10.8%	8.9%	7.3%	7.1%	5.9%	3.8%	3.2%	3.1%	2.8%	2.7%
Orchidopexy	88.7%	88.0%	87.4%	87.9%	88.8%	88.3%	86.3%	85.0%	83.1%	82.8%
Endoscopic resection of prostate (TUR) – can include laser surgery	5.7%	5.8%	4.8%	3.8%	3.0%	2.7%	2.0%	2.3%	1.8%	2.3%
Endoscopic excision of lesion of bladder	28.4%	27.3%	27.0%	26.9%	27.8%	28.2%	27.0%	25.2%	24.3%	22.7%
Hemithyroidectomy	3.8%	3.5%	4.5%	3.2%	3.3%	3.0%	2.2%	1.2%	1.6%	2.2%
Partial thyroidectomy	7.3%	6.3%	5.9%	6.2%	6.6%	6.1%	5.1%	3.1%	3.2%	2.8%
Posterior excision of lumbar disc prolapse including microdiscectomy	8.7%	7.5%	5.9%	4.6%	4.5%	3.5%	3.2%	2.5%	2.2%	2.4%

paper to make comparisons between different countries on information that may be several years old, England does seem to be performing well in the ongoing development of ambulatory surgery, despite nationally voiced concerns regarding paucity of funding for the National Health Service. We therefore look forward to the development and dissemination of similar data from other countries to allow more accurate comparison.

CONCLUSION

The use of retrospective audit data reviewing the national performance of ambulatory surgery is valuable, allowing comparison of both high and low percentage procedures and developing strategies to influence future rates. The publication of similar information from other countries will assist cross-comparison, allowing the focus of support facilities to those areas where greatest benefit may accrue.

REFERENCES

1. Appleby J. Day case surgery: a good news story for the NHS. British Medical Journal 2015;351:h4060. DOI: 10.1136/bmj.h4060.
2. De Lathouwer C, Pouillier JP. Ambulatory Surgery in 1994-1995: The state of the art in 29 OECD Countries. Ambulatory Surgery 1998;6:43-55.
3. De Lathouwer C, Pouillier JP. How much Ambulatory Surgery in the World in 1996-1997 and trends? Ambulatory Surgery 2000;8:191-210.
4. Toftgaard C. Worldwide Day Surgery Activity 2003. IAAS Survey of Ambulatory Surgery. Ambulatory Surgery 2007;13(1):4-11.
5. Toftgaard C. Day Surgery Activities 2009. International Survey on Ambulatory Surgery conducted 2011. Ambulatory Surgery 2012;17(3):53-63.
6. Brokelmann JD, Toftgaard C. Survey on incidence of Survey on incidence of surgical procedures and percentage of ambulatory surgery in 6 European countries. Ambulatory Surgery 2013;19(4):116-20.
7. Jackson I. New activities to the IAAS Basket. Ambulatory Surgery 2017;23(2):50-1.
8. Jackson IJB, McWhinnie D, Skues M. The British Association of Day Surgery Directory of Procedures. Ambulatory Surgery 2010;16(4):87-9.
9. Hospital Admitted Patient Care Activity 2016-17: Procedures and Interventions. Available at: https://digital.nhs.uk/catalogue/PUB30098.
10. Healthcare Conferences UK. Breast Surgery as Day Surgery. Available at: https://www.healthcareconferencesuk.co.uk/conf/uploads/brochures/1204_20170508-113942_Breast_Day_Surgery_May_2017.pdf.
11. Delivering major breast Surgery safely as a day case or one night stay (excluding reconstruction). NHS Improvement. Leicester. December 2011.
12. Doran HE, England J, Palazzo F. Questionable safety of thyroid surgery with same day discharge. Annals of the Royal College of Surgeons of England 2012;94:543-7.
13. Wood CPJ, McLaren AJ. 7 year series of day case thyroid lobectomy- achievable and realistic practice. Journal of One-Day Surgery 2015;25(4):89-92.
14. Albaladejo P, Aubrun F, Samama CM, et al. The structure, organisation and perioperative management of ambulatory surgery and anaesthesia in France: Methodology of the SFAR-OPERA study. Anaesthesia, Critical Care and Pain Medicine 2017;36(5):307–12.
15. Beaussier M, Albaladejo P, Sciard D, et al. Operation and organisation of ambulatory surgery in France. Results of a nationwide survey; The OPERA study. Anaesthesia, Critical Care and Pain Medicine 2017;36(6):353-7.
16. Leroy R, Camberlin C, Lefèvre M, et al. Proposals for a further expansion of day surgery in Belgium. Health Services Research (HSR) Brussels: Belgian Health Care Knowledge Centre (KCE). 2017. KCE Reports 282. D/2017/10.273/09. Available at: https://kce.fgov.be/sites/default/files/ atoms/files/KCE_282C_Day_surgery_Synthese_0.pdf.
17. Skues M. Editorial: Laparoscopic Cholecyestectomy: How are we doing? Ambulatory Surgery 2017;23(3):85-6.