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The unwritten price of cosmetic tourism: An observational study and cost analysis

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Summary *Introduction and aims:* Cosmetic tourism, driven by the promise of inexpensive operations abroad, is increasingly popular despite warnings from professional bodies regarding associated risks. Increasing numbers of individuals have presented to our department requesting NHS treatment of complications from such surgery. We set out to characterize these patients and evaluate costs incurred through their assessment and management.

Material and methods: An observational study was conducted from 2007 to 2009 on patients presenting to a tertiary referral Plastic Surgery practice with complications of cosmetic tourism surgery. Demographic characteristics, as well as those related to the operation, were recorded. Hospital patient flow pathways were constructed, cost analysis performed using *Patient Level Costing*, and expenditure and profitability calculated.

Key results: Nineteen patients presented within the study period. Most operations were performed in Europe or Asia, and were primarily breast augmentation procedures ($n = 13$). The principal complications were wound infection or dehiscence, and poor cosmetic results. Eleven patients received NHS treatment, at a cost of £120,841. The mean cost for all patients' management was £6360 (range: £114–£57,968), rising to £10,878 for those accepted for treatment. For 8 of the 9 patients (89%) for whom full patient level costing was available, the hospital incurred a financial loss.

Conclusion: The costs to the NHS of managing complications of cosmetic tourism are substantial, and underestimated by central funding agencies.

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Introduction

Substantial public demand for aesthetic surgery exists despite very limited opportunities accessible on the NHS.

Most of this shortfall is met by individuals paying for operations in the private sector, with an increasing proportion of procedures now conducted outside the UK. The process of travelling to obtain medical care has been termed

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“medical tourism”, with “cosmetic tourism” specifically referring to aesthetic surgery.^{1,2} This can be subdivided into *outbound* (domestic patients seeking treatment abroad), *inbound* (foreign nationals attending for treatment in the UK) and *inbound* (travelling within a country to receive care outside of their home geographic area) practices.³ Medical tourism is a predominantly price-driven phenomenon, with potential cost-savings that can be as high as 90%. Other drivers include comparable or occasionally better quality care, shorter waiting lists, and increased “consumerism” (whereby individuals desire greater scope to dictate the medical treatment they receive, including procedures not offered on the NHS - which, in the current financial climate, includes practically all cosmetic surgery). An industry has arisen whereby medical treatments abroad may be combined as “package deals” with inexpensive flights, hotel accommodation, and often holidays.¹

The initial reduced financial outlay often overshadows potential longer-term considerations for the patient.⁴ All surgical procedures have complication rates, and these may be higher in countries with less stringent healthcare regulation. There may be limited or no prospects to meet a surgeon, cosmetic surgery advisor or specialist nurse in advance, reducing or abrogating preoperative counselling. The same applies to postoperative monitoring and review.⁵ This creates both practical and logistic problems for the patient,⁵ especially in the event of complications or suboptimal outcomes necessitating further intervention.

The scope of this problem remains poorly defined, and in particular the total number of patients using such services is unknown. Consequently, in 2007, BAPRAS commissioned an audit to establish whether patients with complications of cosmetic tourism surgery were presenting to the NHS.^{7,8} One-third of the 240 plastic surgical consultants contacted reported having reviewed such cases, with respondents having each seen a mean of 3.4 patients. The most common complications followed breast augmentation, abdominoplasty and face/neck lifts, likely reflecting the relative frequencies at which these procedures are conducted. Europe and Asia were the predominant locations where initial surgery was performed, but other continents were also significantly represented. The majority of patients were referred to NHS plastic surgeons as unplanned admissions via emergency departments or for urgent outpatient review by general practitioners. These patients not only need clinic assessment but also utilise valuable inpatient beds and consume expensive theatre resources. The same principles extend to patients undergoing initial aesthetic operations in the private sector in the UK outside their immediate geographical area, as the net effect to the NHS is equivalent.⁹

There is no clear policy or consensus regarding who should bear the case load and financial burden of such complications, especially for procedures that would not initially have been offered on the NHS.^{7,8} As the latter is free at the point of use, there remains considerable potential for abuse of the system. In fact, the low cost of many operations may be illicitly underwritten by covert use of the NHS for postoperative review and management of adverse events.⁶ The cost burden remains undocumented.

In this study, we set out to characterize individuals presenting to the NHS for treatment of complications of aesthetic surgery performed in the private sector, either abroad or intrabound in the UK. In addition we evaluated costs to the hospital, and therefore the taxpayer, incurred by assessment and management of such patients.

Patients and methods

An observational study was conducted to identify patients presenting between 2007 and 2009 to a tertiary referral Plastic Surgery practice at Addenbrooke’s University Hospital for management under the NHS of complications of aesthetic surgery tourism. Patient demographics were recorded, as were details of the initial operation and geographical location where it was performed, the nature of the complication, any general treatment that was administered, and whether they were accepted for revisional surgery under the NHS.

For each individual, data were sought to chart a patient flow pathway. This included point of entry to the NHS (emergency department, general practitioner or referral from private sector), planned and unplanned hospital admissions, interaction with different surgical or medical departments, use of operating theatre services, and outpatient clinic reviews.

Patient Level Costing (PLC)¹⁰ and reimbursement were determined prospectively. For some individuals in the early part of the study retrospective estimates had to be made; these data are indicated in the results section. PLC analysis included use of hospital resources (emergency department, wards, operating theatres, outpatient clinics), staff (medical, theatre and allied health professionals), diagnostics (including pathology, radiology and cardiology), and non-surgical therapeutic interventions (medication, and interventional radiological or endoscopic procedures). Theatre time was calculated from the time the patient entered the anaesthetic room until the patient left the operating room, and calculations based on average theatre running costs per minute. Staff pay was estimated according to the number of hours required for each intervention. In patients in whom there was insufficient data to calculate accurate Patient Level Costs, estimates were derived based on available information.

Total cost to the hospital was then calculated. Revenue is provided by the Primary Care Trust (PCT) according to tariffs determined by the Department of Health based on reference costs from the hospitals and on Market Forces Factor. Profitability was derived as the difference between actual expenditure and the level of reimbursement.¹¹

Results

A total of 19 patients were identified over the three year period who met the criteria for this study. The mean age was 43.5 years (range: 30–60), and all were female. Of the initial operations, 12 (63.2%) were performed in Europe (of which 8 intrabound tourism in the UK, 2 elsewhere in Western Europe and 2 in Eastern Europe), 4 (21.1%) in the Indian subcontinent, 2 (10.5%) in Southeast Asia (China and Thailand respectively), and one (5.3%) in the Middle East

(Figure 1A). Complications were principally related to breast surgery (Figure 1B), accounting for 14 (73.7%) patients, of whom 13 had augmentation procedures and one underwent a bilateral breast reduction. The remaining complications followed abdominoplasty (4 patients, 21.1%), facial rejuvenation surgery (face lift and blepharoplasty respectively; 2 patients, 10.5%) and liposuction (1 patient, 5.3%). Two patients had complications from multiple procedures undertaken simultaneously.

Of these patients, 4 presented to the NHS via the Accident and Emergency department, the remainder being

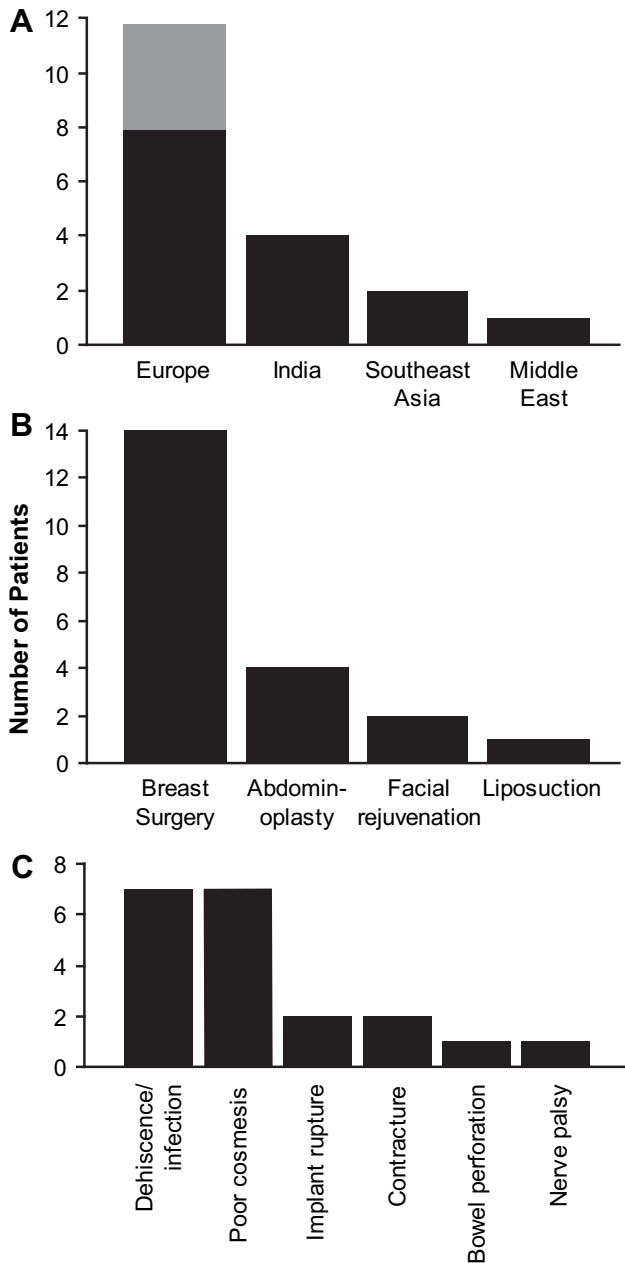


Figure 1 Source and nature of complications from cosmetic surgery tourism presenting to the NHS. (A) Geographical location of original surgery. European tourism is divided into intrabound (UK, black bar) and outbound (grey) tourism. (B) Nature of complicated operation. (C) Type of complication.

referred by their GP or the private sector. The main presenting complaint was with wound infection or dehiscence (7 patients, 36.8%; Figure 1C), followed by patient dissatisfaction with the cosmetic result (7 patients, 36.8%). Two patients presented with ruptured implants following breast augmentation; in one of whom the prostheses had totally disintegrated. Two patients had severe scar contractures. Of the remaining patients, one sustained a bowel perforation during abdominal liposuction and developed peritonitis, and the other a marginal mandibular nerve palsy sustained from a blade injury during surgery for a face lift. Based on their presenting conditions, 11 patients were felt to warrant further treatment under the NHS, either requiring further surgery or medical management of wound infection. Three individuals who were refused NHS treatment subsequently elected to have revisional surgery in the private sector. The remaining 5 patients, who had all presented with problems following breast augmentation, were offered explanation on the NHS but declined as it would not be accompanied by subsequent augmentation with new implant devices.

Comprehensive patient flow and costing data were ascertainable for 9 (47.4%) patients; these were analysed in depth. Four of these patients (45%) were admitted as emergencies via the A&E department; the remaining 5 were seen initially in the outpatient clinic following referral by their general practitioner or from the private sector (Table 1). Almost two-thirds of admissions (63%) were unplanned rather than elective. Several patients interacted with multiple clinical teams: 40% of all admissions were under the plastic surgical team, 30% under gastroenterology, 15% under general surgery, and 5% each under the physicians, orthopaedics and interventional radiology respectively. The median duration of hospital admission was 4 days, with a range of <24 hours to 72 days (Figure 2). The four patients accepted for revisional surgery had a total of 8 procedures between them. Most of the referrals were only reviewed once in outpatient clinic, although there was a significant positive skew with a maximum of 10 outpatient appointments.

Cost analysis was performed to identify the expense for review and treatment of this cohort (Table 2). Major determinants included duration of ward stay, use of surgical theatres, staffing costs, and complex diagnostic investigations (principally radiology). The total cost to the hospital for all these 9 patients was £84,526, the mean cost for all patients was £9392 (range: £174–£57,968), and for those accepted for treatment was £16,766. The hospital was reimbursed by the PCT a total of £57,665. For 8 of the 9 patients (89%), the hospital incurred a loss, costing a total of £26,861.

Expenses incurred for individuals for whom full patient flow or Patient Level Costing data were not available were estimated (Table 3). For this cohort, the total cost was £36,315 (range: £114–£7697), mean cost was £3632, and for those accepted for treatment was £5792. The total cost to the hospital of treating all 19 patients was approximately £120,841.

Discussion

Cosmetic surgical tourism is an increasingly common practice.¹ The benefits to the patient are clear: they may desire

Table 1 Patient flow and use of emergency, inpatient and outpatient resources.

Patient	Initial procedure	Complication	Treatment	A&E	Inpatient-episodes			Outpatient attendances
					Non-elective	Elective	Theatres	
1	Abdominal liposuction	Small bowel perforation, incisional hernia, delayed wound healing	Multiple laparotomies, end jejunostomy and reversal, scar revision	3	3	1	2	6
2	Liposuction, abdominoplasty, labial reduction, vaginal tightening, bilateral axillary sympathectomy, bilateral breast implant, mastopexy, areolar reduction	Breast fat necrosis, wound infection, dehiscence	Antibiotics	1	1	0	0	1
3	Bilateral breast reduction	Wound infection, dehiscence	Debridement, split skin graft, revisional breast reduction	1	1	1	2	1
4	Abdominoplasty, scar revision, bilateral breast implant, mastopexy	Abdominal and breast wound infection, asymmetry	Multiple bilateral revisional mastopexies	6	5	3	3	10
5	Abdominoplasty	Recurrent seromas	Excision	0	0	1	1	7
6	Face lift	Marginal mandibular nerve palsy	Refused	0	0	0	0	1
7	Breast implant	Severe asymmetry, persistent ptosis	Refused	0	0	0	0	1
8	Breast implant	Capsular contracture	Refused	0	0	0	0	1
9	Breast implant	Capsular contracture	Refused	0	0	0	0	1
10	Breast implant	Infection	Explantation, antibiotics	0	1	0	1	4
11	Abdominoplasty	Poor cosmetic result	Refused	0	0	0	0	1
12	Breast implant	Rupture	Open biopsy, implant exchange	0	0	1	2	3
13	Breast implant	Severe asymmetry	Refused	0	0	0	0	1
14	Breast implant	Rupture	Implant exchange	0	0	1	1	3
15	Breast implant	Infection	Explantation, antibiotics	0	1	0	1	3
16	Breast implant	Infection	Implant exchange, antibiotics	0	1	1	2	4
17	Breast implant	Severe asymmetry	Salvage operation	0	0	1	1	3
18	Breast implant	Infection	Antibiotics	0	1	0	0	1
19	Blepharoplasty	Poor cosmetic result	Refused	0	0	0	0	1

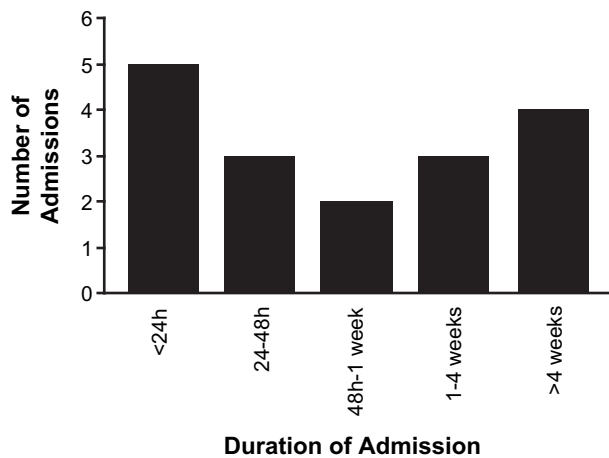


Figure 2 Duration of admission per patient-episode.

a procedure not offered on the NHS, initial costs can be considerably lower, waiting lists are typically short, and surgery is perceived by the patients to be of comparable quality to local providers.^{12,13} The phenomenon of medical tourism has been more extensively studied in the USA than the UK, where 88% of people surveyed said they would consider intrabound, and 39% outbound, care.³ In 2007, 750,000 Americans travelled for medical care at an associated cost of USD\$60 billion. This was estimated to rise to 6,000,000 patients with a cost of USD\$100 billion by 2010, with an annual growth rate of 100%. Most of this is for elective surgical procedures. There is less data available on intrabound tourism practices, although common drivers include the availability of a surgeon to perform a complex or specialty procedure, higher perceived or reported quality and shorter waiting lists.

Although potential downsides are also obvious, many patients choose to overlook these as they often become apparent at a later stage.⁴ Inevitably in cosmetic tourism, there is usually limited scope for preoperative counselling and postoperative review. There is also a lack of clarity to both patients and healthcare professionals as to who will

manage postoperative complications, including revisional surgery,⁵ and there may be no legal recourse should these occur or patients feel dissatisfied with the surgical result. Finally, for packages that include long-haul flights there is a significant risk of venous thromboembolism in the early postoperative period.¹⁴ Several international collaborative initiatives have been launched to address these issues, including the Joint Commission International (JCI). These aim to establish recognized contracts for medical tourism (that include measures for ensuring accountability should complications arise), appropriate hygiene standards and post-procedural care. In addition, BAPRAS, the International Society of Aesthetic Plastic Surgery (ISAPS) and the American Society of Aesthetic Plastic Surgeons (ASAPS) have issued guidance for patients on the risks of cosmetic tourism and information they should seek to acquire prior to undergoing any procedure. The latter includes the ISAPS Patient Safety Diamond, which emphasizes four facets that the patient should establish. These include details of the operation (including indications, likelihood of success and associated risks), qualifications and track record of the surgeon, quality and resources of the healthcare facility, and the appropriateness for the individual patient to undergo the specified procedure.

Our study has identified a number of patients presenting to a plastic surgery practice who experienced substantial postoperative morbidity as a result of procedures performed outside the NHS. The majority of these were conducted outside the UK. These numbers, and the patient characteristics, are consistent with those suggested by the previous BAPRAS audit.^{7,8} Eleven were deemed severe enough to merit emergency or urgent intervention, resulting in considerable cost by default to the hospital trust as well as the NHS (funded by the Department of Health using money from National Insurance contributions and general taxation). They also create competition with other medical and surgical patients for bed space and operating time.⁹ It is noteworthy that remuneration provided to the hospital by the PCT was less than 70% of the actual expenditure. This suggests that the true costs incurred by the hospital during the care of such patients is significantly

Table 2 Cost analysis related to review and management of complications of cosmetic tourism surgery, and remuneration received from central funding authorities.

Patient	A&E	Ward	Theatre	Clinic	Staff	Investigation	Non-operative therapies	Miscellaneous	Total cost incurred	Income received	Difference
1	£469	£3462	£3679	£224	£3450	£707	£247	£321	£12,559	£10,853.16	−£1705.84
2	£161	£257		£37	£49	£36		£34	£574	£971.88	£397.88
3	£122	£2335	£2559	£73	£3482	£30		£154	£8755	£7027.18	−£1727.82
4	£983	£32,185	£3470	£390	£5799	£11,529	£2742	£870	£57,968	£35,775.01	−£22,192.99
5		£1204	£1093	£297	£1128	£144		£108	£3974	£2389.89	−£1584.11
6				£174					£174	£162	−£12.00
7				£174					£174	£162	−£12.00
8				£174					£174	£162	−£12.00
9				£174					£174	£162	−£12.00
Total	£1735	£39,443	£10,801	£1717	£13,908	£12,446	£2989	£1487	£84,526	£57,665.12	−£26,860.88

Table 3 Estimated costs for individuals in whom full flow or patient level data were not available.

Patient	Ward	Theatre	Clinic	Staff	Investigation	Non-operative therapies	Total cost incurred
10	£1330	£1060	£380	£3400	£120	£17	£6307
11			£114				£114
12	£570	£2700	£510	£3400	£194		£7374
13			£114				£114
14	£570	£2450	£510	£1100	£11		£4641
15	£1330	£1060	£304	£3400	£120	£17	£6231
16	£1330	£2450	£380	£3400	£120	£17	£7697
17	£570	£1390	£510	£1100	£11		£3581
18			£114	£15	£11	£2	£142
19			£114				£114
Total	£5700	£11,110	£3050	£15,815	£587	£53	£36315

underestimated by financing authorities: a common theme in socialised medicine.^{11,15}

There is no clear consensus regarding who should pay for the management of complications of cosmetic surgery tourism, particularly for procedures that would not initially have been offered under the NHS.⁶ Severe, emergency complications with substantial associated morbidity clearly merit treatment through the NHS, should patients present acutely to hospital or their general practitioner. Conversely, there is no legal or moral obligation on the NHS plastic surgeons to offer revisional surgery for purely cosmetic procedures which have no functional or significant psychological impairment, simply because the patient is not satisfied with the aesthetic result. It is the majority of patients who fall between these posts that pose the greater quandary, where criteria as a surgical emergency are only partially achieved. This was exemplified in our cohort by the patients who underwent breast augmentation who subsequently developed implant-related complications such as capsular contracture. When offered explanation of the prostheses on the NHS without the prospect of replacing the implants most of the patients refused the treatment. This is because the qualifying operation would not include re-insertion of the breast implants (as stipulated by the Primary Care Trust) and would leave them with deflated and deformed breasts that were cosmetically unacceptable to the patient. Although the practice is still limited, a number of insurance companies have begun to offer policies that cover the cost of revisional surgery or treatment of complications following cosmetic tourism surgery, and these will help address this issue.

Our study identifies and highlights a number of important points. Firstly, it confirms the ongoing conduct of cosmetic tourism, and the need for better patient education about the potential risks of such practices.¹ These include the lack of clear responsibility for long-term review and management of complications. The initial cost-saving to the patient could be outweighed by later expenses related to surgical revision in the private sector should they be refused treatment under the NHS.⁴ Secondly, a consensus statement from specialist bodies and health funders would be helpful to clarify the rights of the patient and duties of the NHS in such cases.¹⁶ Finally, this study suggests that central funding agencies need to review the actual costs associated with managing such patients, as the

data herein imply that current estimates are substantial under-valuations.

Conflicts of interest

None to declare.

Funding

None to declare.

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