Perspective

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The Use of Augmented Reality Assisted Surgery Beneficial in Urology

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Description

Google glass and analogous technologies have been described being used in multiple surgical settings. Our end was to concentrate solely on the papers that used this technology in urology theatres for the purpose of education. Studies describe a big eventuality for Google Glass and analogous head mounted bias for the part of surgical training in Urology, still, larger studies looking at further varied operations can help support this standpoint.

Technology in surgery is an ever advancing arena. The last two hundred times has seen the preface of anaesthesia, antiseptics and radiology, all of which has advanced surgical wisdom to what we now have in the ultramodern day, including open surgery being replaced by laparoscopic and endoscopic surgery and now indeed with minimally invasive procedures [1]. Surgical invention is essential in moving on surgical norms, perfecting both surgical education and surgery itself. The arrival of stoked reality and the use of Optic Head Mounted Bias (OHMB) similar as Google Glass (Google Glass, Mountain View, California) in 2013 has brought another specialized revolution to surgery.

Google Glass comprises of a head mounted computer with a prism for 720p HD display, processor, touch sensitive controls and a gyroscope. Google Glass can also be controlled with voice activation. These technologies give the medium for both training and trainee surgeon to partake the same field of view. Likewise, OHMD technology provides the occasion for the training surgeon to help ever from a distance [2]. OHMD technology has been utilised in multiple surgical fields, including general surgery, orthopaedics, neurosurgery, vascular surgery, paediatrics and urology. Within the field of urology, Borgmann etal. Utilised OHMD technology to perform 31 stoked reality supported surgeries over 10 different operation types, chancing it to be both a safe and useful tool in the operating theatre [3]. OHMD technology has also been utilised as a system of displaying vital signs to the surgeon, with Iqbal et al. finding that both inexperienced and educated surgeons likewise replied to crazed vital signs with OHMD with no mischievous goods to surgery [4]. In this methodical review, the authors look to assay all exploration pertaining to the use of OHMD in the urological education.

A methodical hunt strategy was employed using EMBASE, Medline and PubMed. Search terms related to Google glass/ head mounted displays and urological surgical training. Reference lists in included papers were also reviewed to identify any fresh applicable papers. In total, after removing reprises, 92 unique papers were linked. Papers where this technology was used during surgery but not for tutoring purposes were rejected. Also, use of this technology in anon-urological setting, case reports, reviews, studies, objectifications and papers not in English were rejected. After reviewing titles, objectifications and full textbook where necessary, 2 individual papers were included. Three papers pertaining to the use of OHMD in urological education were plant. They're bandied in detail below.

Iqbal et al [5] explored the efficacity of Google glass as a vital signs cover during urological surgery. They signed medical scholars, urology trainees and urology advisers for this study. The study looked to gain feedback through dimension of response time to changes in vital signs of the simulated case as well as a post exposure questionnaire fastening on their opinions and feasibility of using Google Glass in the surgical field. Several parameters were measured including the actors heart rate, response time, specialized performance and their overall opinion of the technology.

Dickey etal. conducted a study into the use of Google Glass OHMD technology to train urology residers in the USA in Implantable Penile Prosthesis (IPP) placement. There were two main factors to this. The first element was that trainees were suitable to use OHMD to view demonstration vids on the process of IPP placement in a penoscrotal approach. This projected the way of IPP procedure over the case in real time, allowing the urology occupant to visualise the way of surgery before doing them. The alternate element was the capability for the OHMD technology to software to descry areas of interest throughout the surgery, allowing faculty to interact with the urology occupant. This could be to a remote surgeon who would be suitable to interact with the urology occupant pressing areas of interest with a cursor.

In total 30 urologists were involved. 10 were urology faculty members, whilst the remaining 20 were urology residers. Post-IPP insertion, all surgeons were asked to complete a questionnaire grounded on a point standing scale. Results plant this to be educationally useful (8.6 out of 10), easy to use (7.6) and likely to want to use again (7.4). The technology wasn't plant to be exorbitantly distracting (4.9). The results all show that the use of OHMD in urological training in this setting to be positive.

Nakayama used Sony OHMD to ameliorate education in Japanese medical scholars. The authors proposed that medical scholars frequently have unfavorable educational gests in the operating theatre, leading to a drop in inferior croakers progressing to advanced surgical training. To offset this, the study looked at using OHMD technology during laparoscopic radical or partial nephrectomy or laparoscopic radical prostatectomy. During surgery, elderly medical scholars would wear OHMD and audio transmitters so the lead surgeon could see a magnified 3D view of the operative field whilst being suitable to communicate two- way with the surgical preceptor performing the operation [6-8].

In total, 20 5th and 6th time medical scholars from Tokyo Medical and Dental University were used in the study. Post-surgery, medical scholars completed a questionnaire grounded on a point standing scale. Questions were about satisfaction of surgical education with and without the use of OHMD. Scholars were also asked to estimate comfort.

Overall, scholars reported they had preliminarily not had favorable gests in the operating theatre, expressing they didn't feel welcome (1.6 out of 5) and frequently dithered to ask questions2.6). Whilst using OHMD, scholars felt more motivated (4.5), more welcome (3.4) and lower reluctant to ask questions (3.6). Scholars also reported that they felt the use of the technology bettered their knowledge of the deconstruction (4.3). 10 of scholars reported they plant the technology uncomfortable, and 25 reported eye fatigue [9].

Difficulties Encountered

All three studies reflected on the specialized difficulties as well as physical strain associated with using the Google glass/ head mounted displays. These affiliated to substantially battery life and overheating of the headsets as well as findings of fatigue and eye strain whilst using them. This is commodity that won't be unique to this type of technology aiding surgery, as with all technology and instrument aiding surgical procedures the instruments or bias may not fit a one-size-fits-all model and can leave the stoner with an element of discomfort. Through the development of this model advancements in the future could be made, especially if it was allowed that their use in surgical training was supposed salutary [10].

Limitations of the Studies

Looking at the different shoes of all three papers it's clear that one is grounded more on observation of a learner compared to the other which involves further of hands on approach of the learner and therefore aimed at an advanced position of training. The third study tries to combine hands on approach anyhow of experience position, although this has its own bias, videlicet that actors ameliorate due to increased experience alone as opposed to the aid of the technology. This is an area of the technology that will need to be explored further, as to which setting, or indeed if both settings are most suitable for educational purposes.

Although all studies describe a big eventuality for Google spectacles and analogous head- mounted displays there are veritably limited studies which concentrate solely on their use in Urology and their training openings. All studies use only a small quantum of actors so drawing significant conclusions from them should be done with caution, still, the feedback in all studies by actors has been positive in respects to educational utility as well as their capability to engage druggies in further training and literacy openings and their amenability to use the technology again.

References

1. Gawande A (2012) Two hundred years of surgery. N Engl J Med 366: 1716-23.
2. Ponce B (2014) Emerging technology in surgical education: Combining real-time augmented reality and wearable computing devices. Orthopedics 37: 751-7.
3. Borgmann H, Rodríguez SM (2016) Feasibility and safety of augmented reality-assisted urological surgery using smartglass. World J Urol 35: 967-72.
4. Iqbal M (2016) The effectiveness of Google GLASS as a vital signs monitor in surgery: A simulation study. Int J Surg 36: 293-7.
5. Nakayama T (2016) A novel interactive educational system in the operating room--the IE system. BMC Med Educ 16:44.
6. Liebert C (2016) Novel use of google glass for procedural wireless vital sign monitoring. Surg Innov 23: 366-73.
7. Datta N (2015) Wearable technology for global surgical teleproctoring. J Surg Educ 72: 1290-5.
8. Nakhla J (2017) Use of google glass to enhance surgical education of neurosurgery residents: Proof-of-concept study. World Neurosurg 98: 711-4.
9. Evans H (2016) A comparison of google glass and traditional video vantage points for bedside procedural skill assessment. Am J Surg 211: 336-42.
10. Muensterer O (2014) Google glass in pediatric surgery: An exploratory study. Int J Surg 12: 281-9.