Original article

Assessment of the quality of internet information on sleeve gastrectomy

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Abstract

Background: The Internet is an important source of information for morbidly obese patients who are potential candidates for bariatric procedures. Over the past few years, there is growing demand for sleeve gastrectomy because of perceived technical ease balanced with excellent outcomes. The aim of this study was to assess the quality and content of available internet information pertaining to sleeve gastrectomy. Our hypothesis is that this information is inconsistent and inaccurate.

Methods: A total of 50 websites were analyzed in September 2013. We used the search term "sleeve gastrectomy" to identify sites on the most common internet search engines: Google, Yahoo, Bing, and Ask. Based on popularity of use, 20 websites were obtained through the Google engine and 10 sites by each of the others. Websites were classified as academic, physician, health professional, commercial, social media, and unspecified. Quality of information was evaluated using the DISCERN score, the Journal of the American Medical Association (JAMA) benchmark criteria, and the Health on the Net code (HONcode) seal accreditation. The DISCERN score varies from 0–80 points and is based on 16 questions that evaluate publication quality and reliability. The JAMA benchmark criteria range from 0–4 points assessing website authorship, attribution, disclosure, and currency. HONcode certification was assessed as present or absent website accreditation. Duplicate and inaccessible websites were excluded from the analysis.

Results: We identified 43 websites from the United States, 6 from Mexico, and 1 from Australia. The average DISCERN and JAMA benchmark scores for all websites were 46.3 ± 14.5 and 1.6 ± 1.1, respectively, with a median DISCERN of 48.5 (range, 16–76) and JAMA score of 2.0 (range, 0–4). Website classification distribution was 21 physician, 11 academic, 7 commercial, 5 social media, 4 unspecified, and 2 health professional. The average DISCERN and JAMA benchmark scores were 55.4 ± 13.4 and 2.4 ± 1.0 in the academic group, 49.5 ± 10.0 and 1.9 ± .9 in the physician group, 46.9 ± 14.2 and .2 ± .4 in social media sites, 44.0 ± 2.8 and 1.0 ± .0 in health professional pages, 41.3 ± 14.2 and 1.0 ± 1.0 in commercial sites, and 39.8 ± 19.5 and 1.0 ± 1.1 in the unspecified group. The HONcode seal was present in 2 (4%) of the websites analyzed.

Conclusion: The results of this study suggest poor quality and content of information on the internet viewed by potential bariatric candidates. Only 4% of the websites demonstrated HONcode seal accreditation. The global mean DISCERN and JAMA benchmark scores reported in this study were significantly lower than one would expect. Academic and physician websites offer the best information content whereas the worst was observed in the commercial and unspecified groups. (Surg Obes Relat Dis 2014;▮:00–00.) © 2014 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords: sleeve gastrectomy; internet; quality; bariatric

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The Internet's enormous growth has changed the way we obtain information [1]. It is estimated that approximately 1,319,872,109 people use the Internet and more than 270 million are Americans [2]. The Internet has become a useful tool for the sharing of medical knowledge and its use in this manner is increasing [3]. As individuals take a more active role in the management of their own health, more consumers are independently searching health information via the Internet. In the year 2011, $> 80\%$ of adults reported using Internet resources to support healthcare decisions [4]. Physicians are also turning to the Internet to stay informed and interact with their patients. Given the vast amount of healthcare data available on the Internet, there are several concerns about the quality and content of this medical information [3,5]. Different reports claim inaccurate and inconsistent information contained in many health websites [6,7].

Over 100 million American adults are currently overweight or obese. The Internet is an important source of information for morbidly obese patients who are potential candidates for bariatric procedures. Although physician advice significantly affects a patient's choice of weight loss modality, people also make health choices based on information they find on the Internet [8,9]. Laparoscopic sleeve gastrectomy (SG) is an established surgical approach, with a surge in popularity because of its perceived technical simplicity, feasibility, and excellent outcomes. Several studies have shown SG to be a durable procedure that achieves sustained weight loss and resolution of co-morbidities up to 5 years follow-up [10]. Likely because of this supportive evidence, we have seen dramatic growth in the number of SG performed in recent years. The aim of this study was to assess the quality of information about SG on the Internet using recognized scoring systems such as the Journal of the American Medical Association (JAMA) benchmark, the DISCERN criteria, and the Health on the Net code (HONcode) accreditation.

Methods

A total of 50 websites were analyzed in September 2013. The search term "sleeve gastrectomy" was used on the most common Internet search engines: Google, Yahoo, Bing, and Ask. The total number of websites returned by the search was: 818,000 results for Google (www.google.com); 899,000 results for Yahoo (www.yahoo.com); and 901,000 for Bing (www.bing.com). Of note, the total hit number for the Ask (www.ask.com) search engine was not available. Google sites led the U.S. explicit core search market in September 2013 with 66.9% market share, followed by Bing sites (Microsoft) with 18% and Yahoo sites with 11.3%. The Ask network accounted for 2.5% of explicit core searches, followed by other search engines (AOL) with 1.3% [1]. Based on this popularity of use, 20 websites were obtained through the Google engine and 10

sites by each of the others. Popularity of use was determined using "the internet world statistics" website (http://www.internetworldstats.com), which is an international website that features up to date world internet usage, population statistics, and internet data for over 200 countries. Websites were selected based on the order they appeared when using the various search engines. Duplicated websites and those that were inaccessible were excluded from our analysis (Fig. 1).

We classified websites into different categories: academic, physician, nonphysician health professionals (therapists, alternative medical providers, etc.), commercial, social media (YouTube, Facebook, Twitter, etc.), and unspecified websites. Academic websites were those associated with a university or medical school. Physician websites were those sites for individual professionals without academic affiliation. Websites described as commercial were those displaying advertisements and/or different products for sale. Social media websites were any derived from social media platforms. Unspecified websites were those not matching any of the above described categories (National Institutes of Health, Wikipedia, patients' forums, etc.).

Quality of information was evaluated using the DISCERN score [11], the JAMA benchmark criteria [7], and the HONcode certification [12]. The DISCERN was developed by an expert group at the University of Oxford (United Kingdom) as an instrument to judge the quality of written consumer health information and treatment choices [11]. The DISCERN score varies from 0–80 points and is based on 3 sections that include 16 questions (each question ranges from 0–5 points). Section 1 (8 questions) evaluates publication reliability, section 2 (7 questions) is focused on the quality of information on different treatment choices, and section 3 is 1 unique question about the overall rating of the publication.

The JAMA benchmark criteria ranges from 0–4 and was described by Silberg et al. [7]. The endpoint was to critically judge the credibility, reasonability, and utility of medical information read on the Internet. The JAMA benchmark criteria assess the following core standards: website authorship (authors, contributors, affiliations, and credentials), attribution (references and sources used for the content, copyright information), disclosures (sponsorship, advertising, commercial funding, potential conflicts of interests), and currency (dates of posted and updated information).

The DISCERN and JAMA scores impart some degree of bias from the person who is evaluating a website. With the aim of reducing the bias, each website was evaluated by 3 different researchers from the Bariatric and Metabolic Institute at the Cleveland Clinic Foundation who were blinded to each other's score. The score used was a mean of the 3 scores, rounded to the nearest absolute DISCERN and JAMA values.

For each website, we checked for the HONcode seal [12]. The HONcode is the oldest and most widely used ethical