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ORIGINAL ARTICLE

Dermatological image search engines on the Internet: do they work?

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Abstract

Background Atlases on CD-ROM first substituted the use of paediatric dermatology atlases printed on paper. This permitted a faster search and a practical comparison of differential diagnoses. The third step in the evolution of clinical atlases was the onset of the online atlas. Many doctors now use the Internet image search engines to obtain clinical images directly.

Objectives The aim of this study was to test the reliability of the image search engines compared to the online atlases.

Methods We tested seven Internet image search engines with three paediatric dermatology diseases.

Results In general, the service offered by the search engines is good, and continues to be free of charge. The coincidence between what we searched for and what we found was generally excellent, and contained no advertisements. Most Internet search engines provided similar results but some were more user friendly than others. It is not necessary to repeat the same research with Picsearch, Lycos and MSN, as the response would be the same; there is a possibility that they might share software.

Conclusions Image search engines are a useful, free and precise method to obtain paediatric dermatology images for teaching purposes. There is still the matter of copyright to be resolved. What are the legal uses of these 'free' images? How do we define 'teaching purposes'? New watermark methods and encrypted electronic signatures might solve these problems and answer these questions.

Introduction

The Internet is now widely used by the medical community. Most doctors use PubMed to find new articles and reviews on specific subjects: news, protocols, user guides and so on. Google is also commonly searched for technical information about drugs.[1–3]

In dermatology, and especially in paediatric dermatology, a very important part of our work is the search for clinical images, not only for teaching purposes but also for clinical practice. Atlases on CD-ROM first substituted the use of paediatric dermatology atlases printed on paper. These permitted a faster search engine and a practical differential diagnosis comparison. Two search engines are those most used; one created by A. Oranje and another by J. F. Stalder and T. Diebgen.

The third step in the evolution of clinical atlases was the production of online atlases. These have two main advantages over CD atlases: first, they are open to external contribution, and second, they offer free access. There is no need to buy or to have the CD at home – all you need is an Internet connection. The best known are the Dermatology Online Atlas (DOIA), with a very good paediatric section (PeDOIA, http://www.dermis.net), John's Hopkins University's DermAtlas (http://dermatlas.med.jhmi.edu/derm), the Chicago Loyola University Dermatology Atlas (http://www.meddean.luc.edu/lumen/ MedEd/medicine/dermatology/melton/atlas.htm), and the Atlas of the French Society of Dermatology (http://www sfdermato.com/atlas/atlas_v3.htm).

Although these atlases are widely used by the medical community,[4] it is clear that the majority of Internet-user

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doctors have now discovered the 'image search engines'.[5,6] The huge potential of the search engines, structured for the search of not only text files but also jpg format files (the format mostly used for sharing images), has encouraged the Internet-user doctor to use other tools to obtain images from the atlases. Many clinicians now obtain images from university sites, online journals, patient associations, personal websites – from everywhere. Inter-surfer doctors are no longer confined to the use of online atlases.

Looking for images with search engines offers some advantages but there are also some disadvantages. The most obvious advantage is the quantity of images that can be found. This is really immense! The main disadvantage is that you might get images with a wrong diagnosis; this happens mostly from the 'non-certified' sites. It is also possible that the quality of the images obtained might sometimes not be good enough to be used by the clinician.

We conducted the present study with the aim of testing the reliability of image search engines compared to online atlases.

Materials and methods

We tested seven Internet image search engines with three paediatric dermatology diseases. We included the search engines most used: www.altavista.com, www. google.com, www.yahoo.com, www.ditto.com, www.picsearch.com, http://multimedia.lycos.com/ and search.msn.com/.

The names of three diseases were used as keywords. They are, in increasing order of disease incidence: (1) subcutaneous fat necrosis; (2) lichen striatus; and (3) atopic dermatitis.

Three parameters were studied: (1) the number of images obtained; (2) image coincidence with a correct diagnosis (30 first images only); and (3) the presence of advertisements, banners, and links from pharmaceutical companies or websites.

The research was performed at 2130 + 1 h GMT on 23 August 2005.

Results

Keywords: subcutaneous fat necrosis

Image search engine	No. of images	Correct diagnosis (first 30 images)	Presence of adverts
www.altavista.com	3	2/3	0
www.google.com	18	18/18	0
www.yahoo.com	4	4/4	0
www.ditto.com	0	0	0
www.picsearch.com	5	4/5	0
http://multimedia.lycos.com/	5	4/5	0
http://search.msn.com/	5	4/5	0

Keywords: lichen striatus

Image search engine	No. of images	Correct diagnosis (first 30 images)	Presence of adverts
www.altavista.com	17	17/17	0
www.google.com	70	29/30	0
www.yahoo.com	19	19/19	0
www.ditto.com	0	0	0
www.picsearch.com	40	30/30	0
http://multimedia.lycos.com/	40	30/30	0
http://search.msn.com/	40	30/30	0

Keywords: atopic dermatitis

Image search engine	No. of images	Correct diagnosis (first 30 images)	Presence of adverts
www.altavista.com	1522	29/30	0
www.google.com	1950	25/30	0
www.yahoo.com	3035	29/30	1
www.ditto.com	0	0	0
www.picsearch.com	558	30/30	0
http://multimedia.lycos.com/	558	30/30	0
http://search.msn.com/	555	30/30	0

Discussion

The first impression from this research was that, in the majority of cases, the response time was almost immediate. All services tested (except Ditto, which was possibly out of order; no statement appeared on its web page) provided a direct link to the website where the image could be found. All providers, except for Picsearch, presented the image, real size, on a white background.

The best two search engines with regard to the number of images obtained were Yahoo and Google.

It should be pointed out that when using the keywords 'atopic dermatitis', many of the images were listed twice or even three times, probably because they had identical locations on different websites.

It seemed evident that Picsearch, Lycos and MSN offered identical results, so it is possible they are using the same software.

Another fact worth mentioning is that currently no advertising disturbs the research of clinical paediatric dermatology images through the image engines on the web.

It is also important for practical reasons to mention that Altavista offers a very intuitive system for differentiating designs from images not offered by other sites.

Conclusion

From our point of view, the service offered by the search engines is good and continues to be free of charge. The coincidence between what you search for and what you obtain is, in general, excellent and does not contain any publicity (at least in the first 30 images). It is not necessary to repeat the same search with Picsearch, Lycos and MSN, because the response obtained would be the same (they probably share software).

As a final conclusion we would like to point out that image search engines provide a useful, free and precise method to obtain images for teaching purposes in paediatric dermatology.

The matter of copyright still has to be resolved. What are the legal uses of these 'free' images? How do we define 'teaching purposes'? On many occasions the images we obtained were not original to the site from which we downloaded them. Could they have been 'stolen'? There is still debate on the matter of copyright but there is some consensus about the fair use and the possibility of using images in not-for-profit educational institutions.

It is also important to point out that the electronic images could have been 'retouched' as in the Pixel-Byte syndrome.[7] New watermark methods and encrypted electronic signatures might resolve this problem and answer these questions.

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