



Research Poster Guide

What is a poster?

A scientific poster is a visual presentation of scientific research in a standard form, with heading, name of researcher, name of research institute, text, tables and illustrations displaying the results of the research.

Title, formatted in sentence case (Not Title Case and NOT ALL CAPS), that hints at an interesting issue and/or methodology, doesn't spill onto a third line (ideally), and isn't hot pink

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<p>Introduction</p> <p>Congratulations a reader was excitedly intrigued by your title. Now you have 25 sentences to hook the reader into reading more by describing what your question was and why the answer, that is, your experiment, matters. Concise background information will cause them to think "hey, if I can't stand reading you're a pain, that can be avoided".</p> <p>Typically research that shows how best to answer a read if you use a verb form such as "happened" is read and your professor will be reading. Figure legends, the Results also shows that fully justified text (the paragraphs) is right-hand side and reads really well.</p> <p>Figure 1. A photograph of your research can look like yours and photographs for permission to use, and use teacher</p> 	<p>Results</p> <p>The overall layout in this area should be visually compelling, with clear cues on how a reader should flow through the components. Be creative. You might want a large map with text graphs, or flow diagrams or text, arrows, and connecting information to show how the research was conducted, or the processes used or what you found. Be sure to separate figures from other figures by boxes that are not connected. Use color and font to distinguish figures from other figures.</p> <p>If you can add small drawings or icons to your figures, these visual cues can be helpful aids in orienting viewers. And one colored arrow or outline in these sections on separate parts of graphs. You can even put out attention to areas to tell readers what's going on that's interesting in relation to the hypothesis is being tested. If you're "this reader was most likely caused by experiments that measured the side" (also, don't be afraid of using colored corners lines to show how one part of a figure relates to another figure. These tips might make sense for published manuscripts, but posters can be more personal and better look better).</p> <p>Figures are preferred for tables are sometimes unavoidable, like data. But go to great efforts to make a table professional. Look in a spreadsheet format that makes the content, that type-line thickness, text alignment, etc., exactly. Again, use colored text or arrows to draw attention to important parts of the table. Paragraph format is fine, but so are bullet lists of words:</p> <ul style="list-style-type: none">• First of 12 hierarchical data survived• Hierarchical data are fine• Content data completed more factors or things, that can follow lines	<p>Conclusions</p> <p>Conclusions should not be the dry restatement of your results. You want to guide the reader through what you have concluded from results, and you need to state why these conclusions are interesting (i.e., don't assume reader will guess). These two essential elements should not be back-to-back but rather separated in the introduction. If you don't mention a finding again in the introduction, do that.</p> <p>A good conclusion will also explain how your conclusions fit into the literature of the topic. E.g., how exactly does your research add to what is already published on the topic? It's important to be readable, and precise in this section, partly because authors of previous literature may still be alive and even attending the conference. You can also display your appreciation of others' input by citing commentators you have had both your comments.</p> <p>Finally, you want to tell readers what you have found that they might be able to use and who should do it. E.g., and you currently, think that each step is not a shared method process with different skills. Refer to your drawing.</p> <p>Figure 2. The key to get a lot of personally used the drawing because interest might be to present (and if you're not already standing there to correct your conclusions, your poster will be a great way to do so).</p> <p>If you have a graphical way to represent the next steps of your hypothesis, by all means include it in this section. For example, you might make a graph with hypothetical data that shows an expected result in a future experiment. That's something you normally do, but it's a traditional message, but it's really fine for a poster.</p> <p>If you're serious, this poster should be 400 words. Aim for 300 words. If you are above 1000 words, your poster will be something long to someone except your collaborators.</p> <p>A well designed poster retains plenty of white space separating edges of text boxes, graphics, and tables. You do what space between your text and edge of box. Without white space a poster will be hard to read and uninteresting.</p>
<p>Materials and methods</p> <p>For people, if any, really want to have the granular details of what you've been up to, so be brief. Use highly annotated photographs, drawings, or flow charts to visually convey your general experimental approach. To better organize research in the process of results. Be including actual objects such as study organizers (their contents, research papers, photos, etc.) in a short review (left) as an introduction with values.</p> <p>Figure 2. Use an artist to illustrate the important steps in your protocol. A photograph of you actually doing something might be nice, too. (Image by John Snow 2015)</p> 	<p>Literature cited</p> <p>Bonick, J.L., J.M. Hays, and M.M. Bingham. 1988. Laxative condition influences circadian rhythms in human. <i>American Medical Association</i> 159:444-447.</p> <p>Bonick, J.L. 1988. The evolution of circadian rhythms. Pages 67-105 in: The Evolution of Life, edited by R.E. Rickard and B.E. Lewis. Science, Sunderland, MA.</p> <p>Scott, R.C. 2005. Evolution in Oxycoccus an introduction. University of California Press, Berkeley.</p> <p>Society for the Study of Evolution. 2003. Statement on teaching evolution - http://www.evolutioneducation.org/resources.html, Accessed 2007 Aug 9.</p>	<p>Acknowledgments</p> <p>We thank J. Gier for laboratory assistance, Mary Anna for seeds, and Herb for his guidance on finding for this project was provided by the Department of Zoology. Note that people's titles are omitted (unless are TMs).</p>
		<p>Further information</p> <p>More tips and inspiration are found at "Designing conference posters"</p> <p>http://colin.purrington.com/tpc-poster-design</p>

The treatments differ in their effects?




Figure 4. Legends can briefly describe the experiment, answer the question, and add visual elements. It's fine to include the number of the figure in the legend.

Do A and B respond differently to X?




Figure 5. Label elements instead of using an existing one. Use a different color for elements. Label pictures of A and B if they are actually things (e.g., forms of rat with, without brain).

Are medians of treatment A and B different?




Figure 6. Don't be tempted to make text in figure legends, axis labels, etc. This is because authors are probably most interested in reading your figures and legends.

Overview

- The scientific poster is an excellent way of presenting a researcher's work.
- It necessitates a brief and fluent formulation, setting out all the stages of the research in a condensed, clear and interesting form.
- The process requires thought and planning on selection of information and on design.
- It is a hands-on experience involving creative activity, teamwork and division of roles.

Great Poster Elements

- Easy to read/follow

If your poster is clear and concise, an individual should be able to read it in less than 10 minutes

- Attracts viewer's attention
- Communicates results of investigation

Sections of a research poster

- Title
- Introduction
- Materials and methods
- Results
- Conclusions
- Acknowledgments
- Further information

Title

- 2 lines or less
- 85pt. Type
- legible at 25 feet
- Clear, concise, direct

Introduction

- 200 words or less (Average 150 words)
- Define the issue
- Establish the purpose of your work
- Justify your experimental approach
- Provide a clear hypothesis

Materials and methods

- Approximately 200 words
- Use figures and tables to illustrate experimental design
- Use flowcharts to summarize timing of events
- Include photograph or labeled drawing
- Outline statistical plan

Results

- Approximately 200 words
- Provide qualitative/descriptive results
- Present analyses that specifically address the hypothesis
- Refer to charts or images

Conclusion

- Approximately two sentences
 - Concise summary
- Reminds viewer of relevance

References

- Approximately 5-10 citations
- Standard format

Acknowledgement

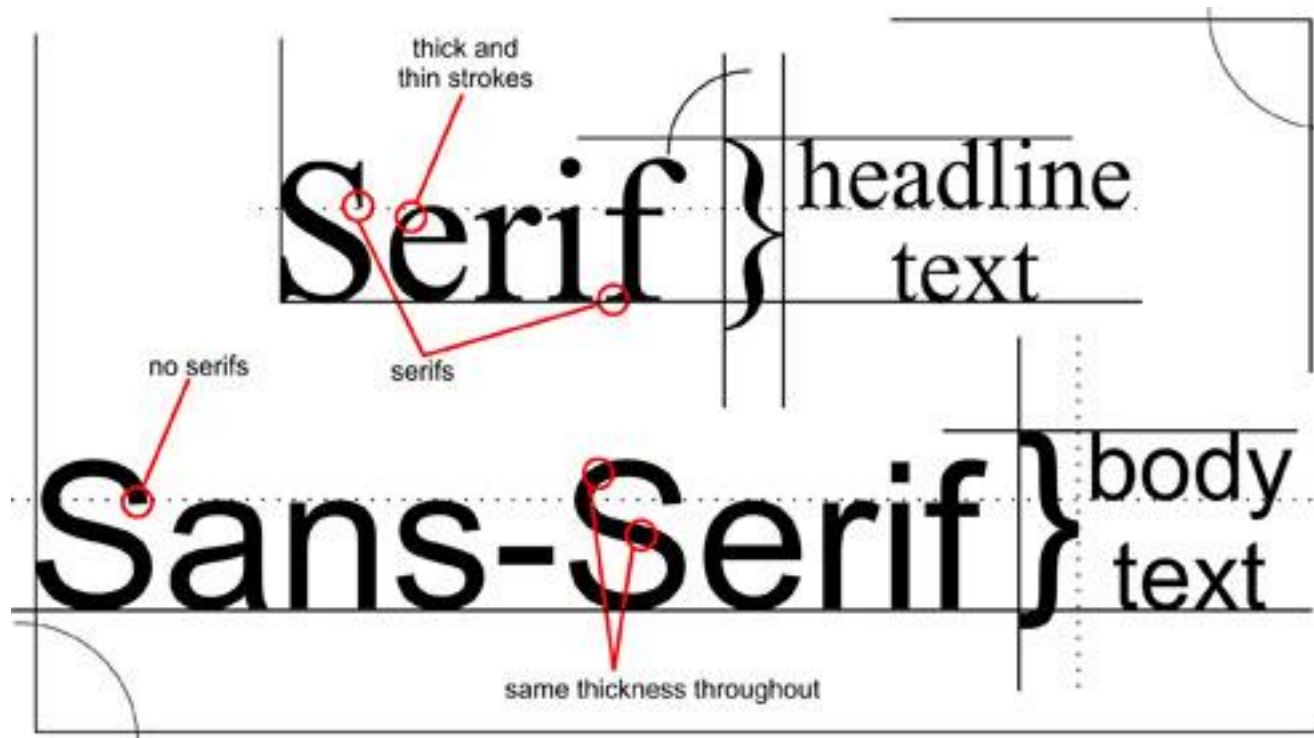
- Assistance and financial support

Recommended font sizes

- **T**itle: 85pt minimum
- **N**ames of authors and their organisations: 56pt minimum
- **S**ub-headings: 36pt minimum
- **B**ody text: 24pt minimum
- **C**aptions: 18pt minimum

Fonts

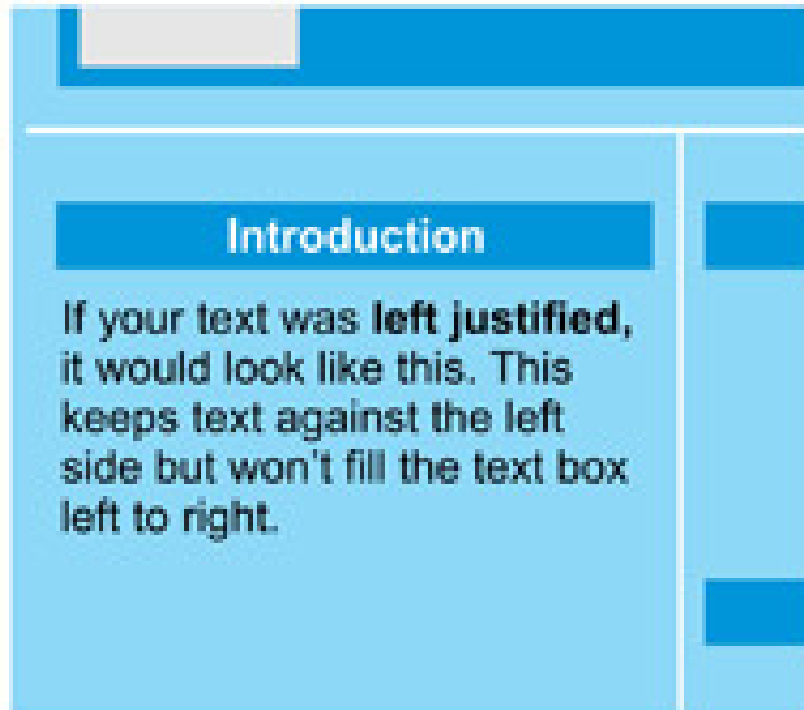
- Use sans serif fonts: these fonts are more legible than serif fonts from a distance.



Fonts (cont.)

- Avoid excessive text. (Poster should have roughly 20% text, 40% figures, 40% space)
- Text and figures should be legible from around 5-7 feet away (or roughly 1.5m to 2m)
- Leave breathing space around your text.
- Do not use a different font type to highlight important points - otherwise the fluency and flow of your sentence can appear disrupted.
- Do not use all UPPER CASE type in your posters. It can make the material difficult to read.
- Use the bold face or italics or combinations to emphasize words and phrases.
- Left-align text. Using fully justified text will create large gaps between some words and make it difficult to read.

Left Justified

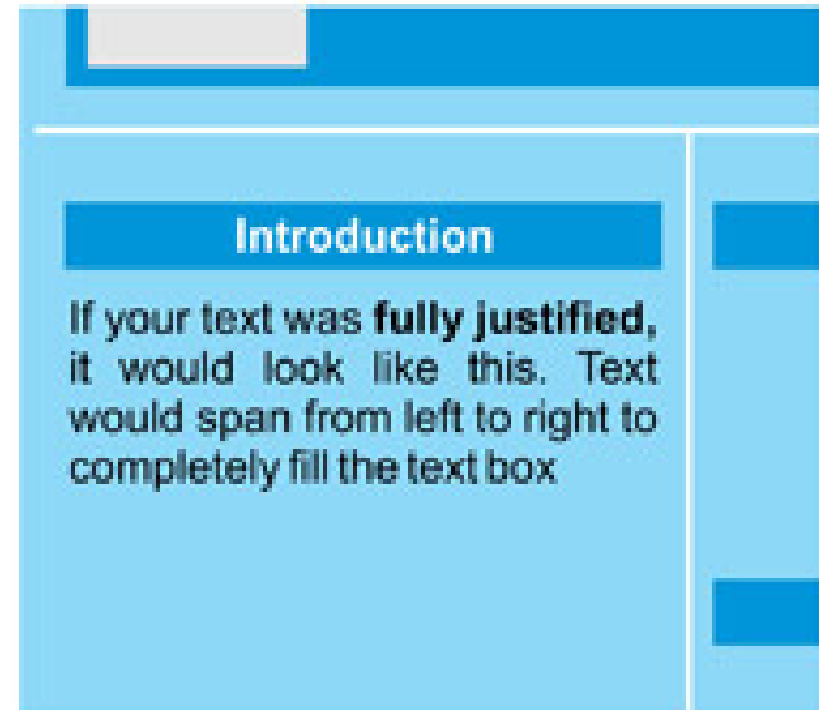


The diagram shows a light blue rectangular text box with a white header bar at the top. The header bar contains a grey rectangle on the left and a blue rectangle on the right. Below the header bar, the text "Introduction" is centered in a blue bar. The main text area contains the following text, which is aligned to the left side of the box:

If your text was **left justified**, it would look like this. This keeps text against the left side but won't fill the text box left to right.

VS

Fully Justified



The diagram shows a light blue rectangular text box with a white header bar at the top. The header bar contains a grey rectangle on the left and a blue rectangle on the right. Below the header bar, the text "Introduction" is centered in a blue bar. The main text area contains the following text, which is aligned to both the left and right sides of the box:

If your text was **fully justified**, it would look like this. Text would span from left to right to completely fill the text box

Font combinations

- Two common fonts that are easy on the eyes are **Arial** and **Verdana**.
- It is important to try to avoid using more than 2 font types because too many fonts distract the viewer. This is especially true when they appear on the same sentence.

Helvetica / Garamond
Caslon / Univers
Futura / **Bodoni**
Garamond / **Futura**
Gills Sans / **Caslon**
Minion / **Gill Sans**
Myriad / Minion
Caslon / Franklin Gothic
Trade Gothic / Clarendon
Franklin Gothic / Baskerville

Color Suggestions

- When choosing colors for your poster, using 2-3 colors will give the best look. Too many colors make it look chaotic and unprofessional, but having no color makes it boring and plain.
- The background and text should have a high contrast. To ensure this, use a light color for the background with a dark colored text or a darker background with light text.

INTRODUCTION

Chronic low back pain (CLBP) has become an increasingly prevalent complaint in family medicine practices that is not only difficult to treat but also extremely costly to patients. This problem can have harmful effects on various aspects of patients' social, mental and physical well-being. There are also consequences on society as a whole as CLBP is a leading cause of long-term disability and workers' compensation.¹

Past research has found significant associations between low back pain and lifestyle factors such as obesity and physical functioning.² Findings have also shown that obesity rates are steadily increasing and stimulating more cases of metabolic syndrome.³ Low back pain is thus related to obesity, which causes more health problems. However, there have not been studies investigating the relationships between specific medical diagnoses and back pain. An objective of this project is to determine if pain is commonly found in conjunction with metabolic syndrome. The aim of this analysis is to analyze correlations between pain and comorbidities including hypertension, diabetes, and hyperlipidemia.

MATERIAL and METHODS

Subjects. Investigators conducted this study in outpatient clinics of six family medicine residency programs across Texas. Patients were invited to participate if they were adults with low back pain for 3 months or longer, and were not new to the clinic. Investigators excluded pregnant women and patients with cancer.

Procedure. Medical students enrolled and surveyed 222 patients as they arrived for routine visits to the outpatient family medicine clinics. When the visit was complete, students retrieved their medical records and abstracted additional information related to low back pain.

Measurement. The 5-page patient survey addressed demographic characteristics, pain duration, frequency and severity, physical functioning and general health, anxiety, depression, social support and stress, and family violence. From the charts, students gathered information about the duration of the doctor-patient relationship, the patient's health insurance, the cause and duration of the low back pain, treatments for pain, comorbidities, and BMI.

Analysis. In this analysis, the key outcome variables were average pain and total body pain. Total body pain is measured by combining average pain with its effect on normal daily work.⁴ Predictor variables included BMI as well as diagnoses including diabetes, hypertension, and hyperlipidemia.

RESULTS

The average age of all participants in the study was 52.9±13.5 years old with mostly females (66.5%) of White or Caucasian background (45.3%). Hispanics (37.4%) were the next largest ethnic group followed by African-Americans (15.9%) and Asian (0.5%). Students completed chart reviews on 179 of the 220 subjects. The most common diagnoses found were hyperlipidemia, hypertension, diabetes and obesity (Figure 1).

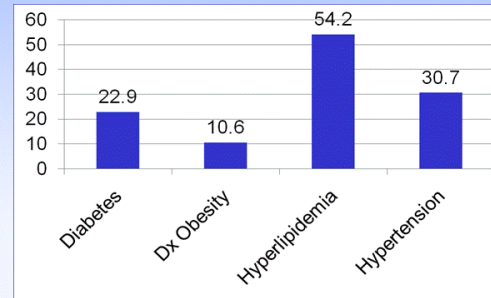


Figure 1. Most common diagnoses found in chart reviews for 179 patients

Outcome: Body Pain		
Predictors	Beta	p-value
African-American	$\beta = +.174$	$p = .023$
Diabetes	$\beta = -.147$	$p = .057$
Hypertension	$\beta = +.128$	$p = .096$
Depression/Anxiety	$\beta = +.327$	$p = .000$

Table 1. Significant predictors of body pain

Outcome: Physical Functioning		
Predictors	Beta	p-value
Age	$\beta = -.257$	$p = .001$
BMI	$\beta = -.169$	$p = .019$
Hyperlipidemia	$\beta = +.124$	$p = .091$
Average Pain	$\beta = -.463$	$p = .000$

Table 2. Significant predictors of physical functioning

RESULTS

Based on linear regression analysis, strong predictors of body pain were African-American background, absence of diabetes, and presence of hypertension and depression or anxiety (Table 1). Hyperlipidemia was a predictor and correlated positively with physical functioning while age, BMI and average pain were negatively correlated (Table 2).

CONCLUSIONS

- African-American patients diagnosed with hypertension, depression or anxiety and without diabetes experienced more body pain. These results are consistent with past studies, which found that psychological risk factors such as anxiety contribute to the development of chronic back pain.⁵ Thus, common medical diagnoses as well as mental status should be utilized when evaluating and treating chronic pain.

- Poorer physical functioning was associated with older patients who had higher BMIs, more average pain but normal lipid levels. Overweight and obese people feel more pain causing them to have less physical function, which in turn may contribute to more low back pain.

- Patients diagnosed with more health problems had higher BMIs and increased body pain. Obesity may be contributing both to chronic disease and to pain. This combination may only serve to reinforce sedentary lifestyle, making management of pain and disease more difficult.

- These findings can help physicians to better understand interactions and associations between individual diagnoses. Patients should be examined as a whole since all health problems influence each other.

REFERENCES

- Badley EM, Rasooly I, Webster GK. Relative importance of musculoskeletal disorders as a cause of chronic health problems, disability, and health care utilization. *J Rheumatol* 1994;21(3):505-14.
- Mattila R, Malmivaara A, Kastarinen M, et al. The effects of lifestyle intervention for hypertension on low back pain. *Spine* 2007;32:2943-2947.
- Ceska R. Clinical implications of the metabolic syndrome. *Diab Vasc Dis Res* 2007;4:S2-4.
- Stewart AL, et al. The MOS Short-Form General Health Survey: reliability and validity in a functional health status. *J Clin Epidemiol* 1989;42(3):217-229.
- Linton SJ. A review of psychological risk factors in back and neck pain. *Spine* 2000;25:1148-1156.

ACKNOWLEDGEMENTS

This study was conducted in the Residency Research Network of Texas (RRNeT) with support from the Texas Academy of Family Physicians Foundation, the Office of the UTHSCSA Medical School Dean, and the South Texas Area Health Education Centers.



Text sizes:

Title: 85 point

Authors: 56pt

Sub-headings: 36pt

Body text: 24pt

Captions: 18pt

Your Ingenious Teaser Right Here to Woo Them Down to the Body

Karolinska Institutet

Conclusions first: 44 pt bold
Always put the most important part - your conclusions - first! Place your conclusions in the upper left hand corner of your poster. Prepare your material from the reader's perspective. What was done, by who and your conclusion has to be understood within a couple of second's reading! Use active voice when writing the text. **textsize: 34 pt regular**

Introduction
Posters are primarily visual presentations. Your poster should be dominated by self-explanatory illustrations such as graphs and pictures while the amount of text should be kept to the minimum.

Your aim
Your poster is an advertisement for your research and as such it needs to be eye-catching and straight to the point. You only have seconds, or at best a few minutes to attract the attention of the visitor to a poster session. Keep your message short and clear

Your message
Keep your message clear and your text concise. Decide what is relevant for this poster and try to get your message across to your target group.

Layout, photos and print
Contact [Medishyrög](#) at University Library for help with layout and image enhancement. For printouts and professional photographers contact [Bildmakarna](#). For more information: www.bildmakarna.kih.ki.se

Tips:
The best font for text blocks that are as short as they should be on a poster is a Sans Serif typeface family. Therefore, use sans serif fonts such as Arial or **Mundo** sans rather than serif fonts like Times or Courier. **AVOID CAPITAL LETTERS IN TEXTS THAT ARE LONGER THAN ONE LINE, SINCE THEY ARE MORE DIFFICULT TO READ.**

Handouts
If you succeed in getting the reader's attention, provide her/him with more detailed information in the form of handouts or printed articles. Include references on your handout instead of your poster.

It is always nice to put in a picture and write some few short notes of what's going on in the future. Put handouts, business cards, nearby - on a table or in an envelope hung with the poster.

Figure 1: Bar chart showing data for 5 categories. Legend: Y-axis (0-100), X-axis (1-5). Series: Red (1, 2, 3, 4, 5), Black (1, 2, 3, 4, 5).

Figure 2: Pie chart showing data for 4 categories. Legend: Y-axis (0-100), X-axis (1-4). Series: Blue (1, 2, 3, 4), Grey (1, 2, 3, 4).

Image 1: 3D rendering of a human brain.

Image 2: Small portrait of a man.

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Cryptogenic Stroke in the Presence of an Atrial Myxoma

Hamed Abbaszadegan, MD; Jeremy Payne, MD, PhD

Barrett O'Neil Memorial Medical Center Department of Internal Medicine, Phoenix, AZ

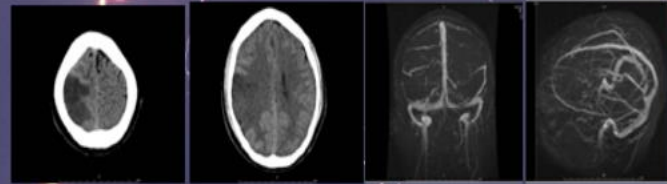
Introduction:

Strokes are often thought of as an occurrence in patients with risk factors such as long-standing hypertension, hypercholesterolemia, diabetes mellitus, "older" age, smoking, and genetic factors to name a few. It is not as common to see strokes in the younger age population (less than 40 years old), especially in the absence of cardiac/brain anomalies, right to left shunting, trauma, or endocarditis. When stroke occurs in this age group, the work up is often exhaustive to exclude clotting disorders, autoimmune conditions, and structural defects.

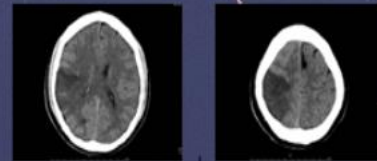
Case Report:

The patient is a 32 year old African American male with no known PMH who presented to the hospital with sudden onset of mild headache, left-sided weakness, and left spatial neglect. During the patient's admission, it was determined that he had an acute right parietal lobe ischemic infarct. Extensive work up did not find a definitive cause, but a right atrial myxoma was incidentally found. There was no clearly visualized patent foramen ovale, however a bubble study suggested a small degree of right to left shunting. No vascular anomaly on MRA imaging was found. Extensive lab work up which included coagulation studies, comprehensive drug screening, cultures, autoimmune etiologies, and lipid studies was unremarkable. The patient was discharged to acute rehab with a potentially cryptogenic stroke. Follow up is to include a repeat transesophageal echo to confirm the myxoma is still present which would then require surgical evaluation for excision.

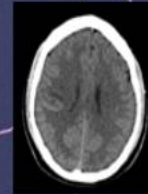
Initial CT & MRA



2nd CT



3rd CT, Day 9

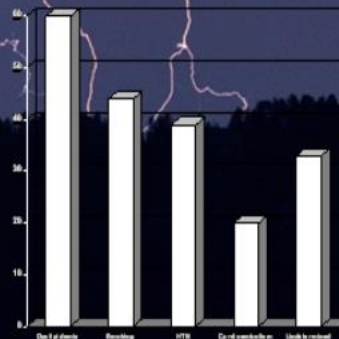


Discussion:

Often co-morbid disease, drug use, smoking, and other high risk activities can predispose patients to pro-thrombotic events. This was not the case in our patient. Etiologies to rule out before tagging a patient with a "cryptogenic" title should include: structural anomalies of the brain (CT + MR imaging), lipid profile, coagulation studies (factor V Leiden mutation, anti-thrombin III, lupus anticoagulant, cardiolipin, prothrombotic gene mutations, homocysteine), infectious etiologies, and auto-immune etiologies (Anti-nuclear antibody, rheumatoid factor). An embolic particle no larger than 1mm is sufficient to cause a clinically significant stroke. Despite no definitive R→L shunt, it is not impossible to imagine a small piece of the myxoma dislodging from an unseen small shunt.

Annual Stroke rate for ages 15-49 = 10.8/100,000

Risk Factors for Ischemic Stroke Age 15-49



Transesophageal Echocardiogram



References:

1. Kizer, Jorge. Evaluation of the Patient with Unexplained Stroke. *Coronary Artery Disease*. 2008; 19(7): 535-40.
2. Putaala, J, Metso, A, Metso, T, et al. Analysis of 1008 Consecutive Patients Aged 15 to 49 With First-Ever Ischemic Stroke. *Stroke*. 2009; 40:1195-1203.

Poster Size

Size	Height x Width (cm)	Height x Width (inches)
A0	118.9 x 84.1 cm	46.8 x 33.1 in
A1	84.1 x 59.4 cm	33.1 x 23.4 in
A2	59.4 x 42.0 cm	23.4 x 16.5 in
A3	42.0 x 29.7 cm	16.5 x 11.7 in
A4	29.7 x 21.0 cm	11.7 x 8.

A good poster

- Is well researched, well structured and well presented
- Conveys your question or research clearly and concisely
- Is eye-catching
- Is not cluttered
- Easy to navigate with an obvious sequence
- Utilizes good design and effective use of color
- Has a good balance of text and graphics
- Makes good use of visuals to convey key messages
- Can be read in 5 minutes from 5 feet away (main headings from 12 feet)