



REVIEW

The presentation of plastic surgery visual data from 1816 to 1916: The evolution of reproducible results



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Summary All scientific data should be presented with sufficient accuracy and precision so that they can be both analyzed properly and reproduced. Visual data are the foundation upon which plastic surgeons advance knowledge. We use visual data to achieve reproducible results by discerning details of procedures and differences between pre- and post-surgery images.

This review highlights how the presentation of visual data evolved from 1816, when Joseph Carpue published his book on nasal reconstruction to 1916, when Captain Harold Gillies began to treat over 2000 casualties from the Battle of the Somme. It shows the frailties of human nature that led some authors such as Carl von Graefe, Joseph Pancoast and Thomas Mutter to record inaccurate methods or results that could not be reproduced, and what measures other authors such as Eduard Zeis, Johann Dieffenbach, and Gurdon Buck took to affirm the accuracy of their results.

It shows how photography gradually supplanted illustration as a reference standard.

Finally, it shows the efforts that some authors and originators took to authenticate and preserve their visual data in what can be considered the forerunners of clinical registries.

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All scientific data should be presented with sufficient accuracy and precision so that they can be both analyzed properly and reproduced. Despite our artistic nature, as scientists we plastic surgeons use visual data to achieve reproducible results by discerning details of procedures and differences between pre- and post-surgery images.

This review highlights how the presentation of visual data evolved from 1816, when Joseph Carpue published his book on nasal reconstruction to 1916, when Captain Harold Gillies, RAMC began to treat over 2000 casualties from the Battle of the Somme.¹ We will see frailties of human nature that led some authors to record inaccurate methods and results that could not be reproduced, and we will see what measures other authors took to affirm the accuracy of their results.

This is not a summary of every publication in the century from 1816 to 1916 that mentioned a plastic procedure; rather it is a representative sample of the best and worst visual data reported in the literature.

Joseph Carpue's prospective study

In 1816, Carpue published the results of his prospective study on nasal reconstruction.^{2,3} Among his notable achievements was his accurate depiction of his pre- and post-operative results. Carpue was himself an artist. He had drawn the illustrations for his first book on the anatomy of muscles and in his primary role as an anatomy teacher he was known as the chalk professor because he would supplement his lectures with sketches on a chalkboard.^{4,5} Despite his artistic talents, he turned to the artist and engraver Charles Turner to create independent, i.e. third party, illustrations for his book. Turner's pre- and final post-operative images are noteworthy because they are accurate. His long-term result shows a fistula and the expected outcome from a forehead flap reconstruction nasal reconstructions that lacked both lining and support and his post-operative images show multiple views (Figures 1 and 2).

Carl Von Gräfe and his Germanic method

Von Gräfe, the professor of surgery in Berlin invited Carpue to lecture and had Michaelis translate Carpue's book into German.⁶ Von Gräfe introduced the root "plastic" when he titled his own book "Rhinoplastik". In his book, von Gräfe complained that Carpue's descriptions were inadequate having "auffallende lücken" [striking gaps] in them.⁷ Von Gräfe succumbed to nationalistic pride because after he summarized what he termed the "Italian" [Tagliacozzi] and "Indian" methods, he stated that the "Germanic" method was the best method of nasal reconstruction. In writing his

history of plastic surgery Zeis, his own countryman, criticized von Gräfe stating:

[Von Gräfe] added only one operation report to the description. Even if he often used the technique later, the title still does not seem justified. The result of all this was to excite envy of the French, and to encourage them to speak of a 'méthode française,' for which there is equally little justification.⁸

Zeis had other criticisms of von Gräfe including the latter's claims that he could prevent stenosis in his flaps with stents and molds. Von Gräfe's pre- and post-operative illustrations of his "Germanic" nasal reconstruction with an arm flap show a nasal highlight usually seen in photos from a reflection of the lower lateral cartilage, but there was no



Figure 1 Carpue case 1 post-operative views. Note how the fistula was clearly marked as 'a' in Figures 1 and 2 (Author's personal copy).

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