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History of Surgical Hair Restoration

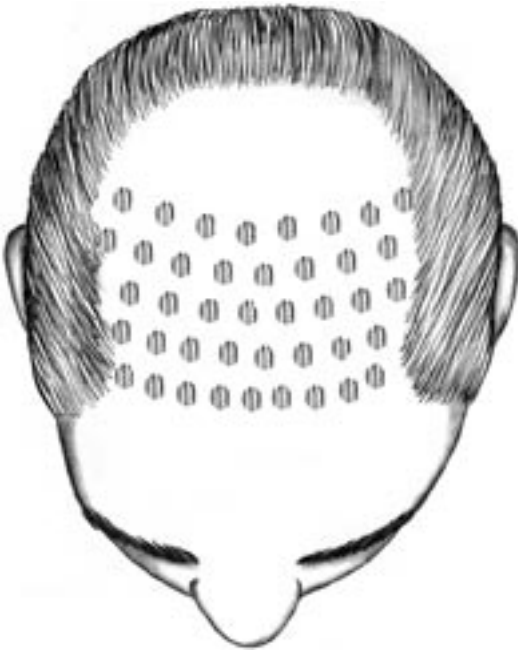
T*his chapter reviews the history of some older-style hair restoration surgical methods, including full-size punch grafts, scalp reductions, and scalp lift and flap surgery. Each of these types of older-style surgical methods attempted to address the problem of hair loss by slightly different applications of the three foundation principles of surgical hair restoration: autografting, donor dominance, and surgical artistry.*

Over the years, as these surgical techniques became more refined and technology advanced, the results from these methods improved. Today, however, they are infrequently performed, and have all been pretty much replaced by the surgical technique called micrografting. They have been replaced by the latest state-of-the-art variation called follicular unit micrografting, which is presented in the next chapter.

When the words “hair transplant” are mentioned, many people still visualize the “pluggy” dolls-hair effect resulting from a single procedure of punch graft hair transplants. Punch grafts, or what are called full-size grafts by hair restoration surgeons, are commonly referred to as “plugs” by people who aren’t in the hair restoration surgery business. This type of hair restoration technique was the leading method for many years, but has rarely been performed since the 1980s.

“Plugs” have actually had a very good history of success, despite the technique continuing to be a source of bad jokes and stories. Over a forty-year period, hundreds of thousands of men have enjoyed the benefits of finishing a complete series of full-size hair transplant

FULL SIZE PUNCH GRAFTS (“PLUGS”)



After a single session of full size punch grafts.

and artistic surgeons, simply look like they have a full head of hair.

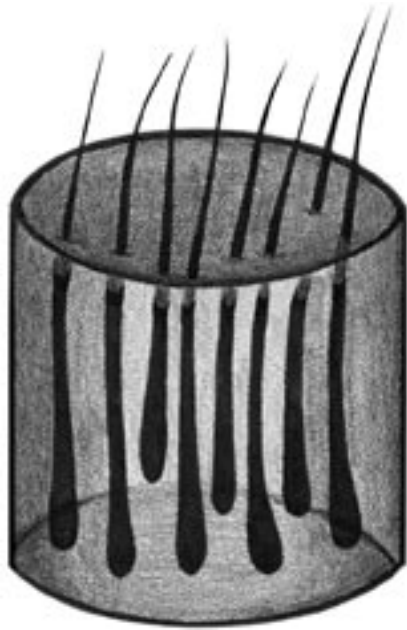
The history of this method of surgery began with Dr. Shoji Okuda, a dermatologist in Japan who successfully performed hair transplantation surgery in the 1930s. In 1939, a Japanese medical journal published a description of his technique of using small circular punches to remove donor skin containing hair follicles from the back and sides of the scalp of his patients. Dr. Okuda used the small circular hair-bearing grafts to artistically restore hair on his patient’s scalps, eyebrows, and pubic hair regions. Due to World War II, his work was largely unnoticed by dermatologists outside of Japan. A decade passed with minimal public awareness of hair transplantation.

Then, in the 1950s, noted New York dermatologist Dr. Norman Orentreich experimented with hair restoration using punch grafts and reported his findings in American medical journals. He was unaware of Dr. Okuda’s earlier work. There was great interest in the proce-

sessions performed by skilled and artistic surgeons. Their results are nearly undetectable, and that is the whole idea. Most of the jokes and stories apply to patients who had not completed the full series of procedures, or who have had the misfortune to select less skilled or less artistic surgeons. The full-size graft patients who completed the entire series of procedures, and who had skilled

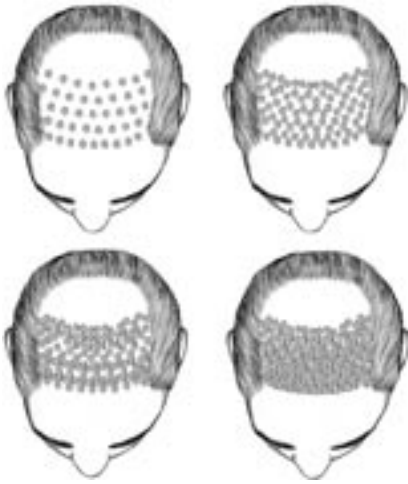
ture. From the late 1950s to the late 1980s, Orentreich's method of punch grafting was the standard method for hair transplantation.

A full-size graft hair transplant procedure was performed under local anesthetic, meaning the scalp was numbed and the patient was awake during surgery. Fifty to one hundred small circular grafts, each about the size of a split pea and containing seven to fifteen hairs each were removed from the back of the head with a circular punch called a trephine. An equal number of small holes were made at the recipient site, starting with the front



A full size graft.

of the scalp to establish the hairline. Each hole was carefully spaced apart from its neighbors to best assure adequate nutrition for the grafts. The grafts were then placed into the recipient site holes and allowed to heal. The entire procedure took two to three hours. After a three-month wait, another procedure was performed, and another 50-100 grafts were harvested and placed. The spacing between grafts caused the "dolls hair" look after the first procedure. Subsequent procedures filled in the spaces. After four to five procedures the spaces between the recipient sites were completely filled in with growing hair. After the entire series of four to five full size graft hair transplants procedures were done and the last set of grafts had healed, the results were excellent. The patient had a full head of dense growing hair with a solid looking hairline. By the late 1970s, full size graft hair transplants procedures were the most frequently performed elective cosmetic surgical procedure on men. The procedure also enjoyed the highest patient satisfaction rating of any elective cosmetic surgical procedure.



A series of four full-size graft procedures.

But there were also some significant problems with full size graft hair transplants procedures. Perhaps the most significant was the “under construction look” that followed after surgery. Immediately after surgery the grafts were quite evident and bandages, crusts from dried blood, and visible sutures would affect the patients appearance for a couple of weeks. A few patients had adequate hair to comb over the new grafts, others wore a hat or hairpiece temporarily, and some just stayed home and took several days off work until the bandages could be removed.

But even after the grafts had healed and new hairs were growing in, the full size grafts still resulted in an “under construction” look. After the first couple of procedures, the spacing between the grafts created a somewhat unnatural look, like doll’s hair, or rows of corn. There was often an uncomfortable six months from the first procedure until after the second procedure healed and the hairs grew enough to effectively cover the spaces between grafts. Subsequent procedures eventually filled in these spaces, but until they were done and the hairs grew long enough, there was an unnatural look. It was this temporary “unfinished” look that caused people to believe they could spot hair transplants because they looked “pluggy.” Once all the procedures were accomplished, however, it was nearly impossible to know.

Another disadvantage of full size grafts was that they could only be used for a relatively small bald spot, because the way the individual grafts were harvested severely limited the amount of donor material available, and the grafts had to be placed close together, with several procedures, to achieve a dense natural look.

Problems occurred when full size grafts were used in an attempt to cover too large an area. At some point the donor area at the back

of the head could no longer provide additional grafts. The result was either noticeable spaces between the grafts, or the risk of a Swiss cheese look on the back of the head.

There was also the risk of poor results. Inexperienced surgeons could easily misjudge the future extent of baldness when planning a full size graft program. For example, four procedures of 100 grafts may have been the limit of what the donor area could supply, and would have been just enough to cover a thirty-five-year-old man's bald spot. But when the same patient reached age fifty, his hair loss would have progressed further, and the dense full size grafts would become a hairy island on the top of his head, surrounded by recent baldness.

With any surgical procedure there were medical and surgical risks. Serious complications were rare in full-size graft procedures; however, certain problems did arise on occasion. If the hair follicles in the grafts were injured during removal, or while being prepared for insertion, or if too many grafts were placed at one time, some follicles did not survive. These grafts were replaced by new grafts in subsequent procedures. Loss of donor hair was unusual for experienced surgeons.

There was also the risk of visible scars. Anytime the skin is cut, there is risk of a scar. There was the risk of visible scarring with full size grafting at both the donor sites and the recipient sites. Small scars were left at each donor site, where a single small graft was removed. If too many donor "plugs" were removed from donor area at the back of the head, or if the pattern of hair loss continued to advance to an extreme degree, the hair on the back of the head became thinner and as a result did not cover the donor scars as well. As a result, visible scars on the back of the head could create a "Swiss cheese" look.

There was also the risk of scars being visible at the recipient sites, where the grafts were placed, although this was not usually a problem because the hair growing from the new grafts covered any visible scars, and there was always enough donor hair left to cover a few failed graft sites. Another problem with visible scars could result from improperly placed grafts that had to be removed. Some surgeons lacking artistic judgment placed full size grafts too low on the forehead, or they filled in the temples, creating an unnatural look. Removal of these misplaced grafts resulted in fine hairline scars.

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Pain was a minor disadvantage with full size graft procedures, and patients were provided with pain-relieving pills. There was some soreness for a couple of weeks at the donor area, when pressure was applied. Most patients went back to work the following day.

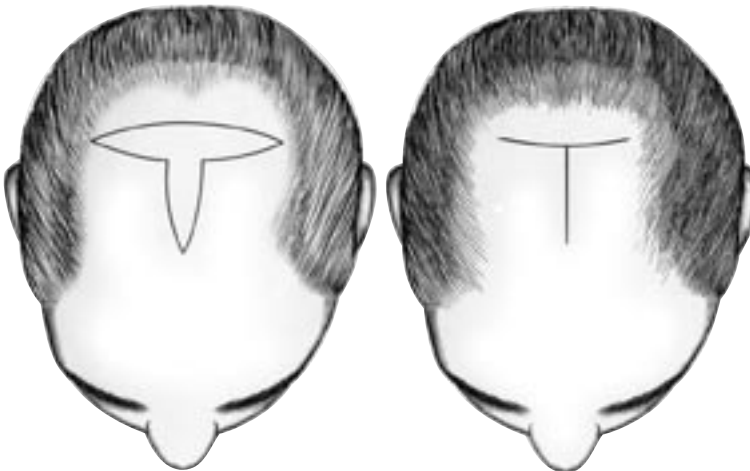
Full size graft procedures were costly, with prices ranging from twenty-five to fifty dollars per graft and a total of 300-500 grafts placed over several procedures. This would total between \$7,500-25,000 for the full set of procedures. And those were 1980 dollars.

Refinements in full size graft procedures occurred over time, including using sutures to close the donor area wounds, cutting grafts into sections to make mini-grafts for a softer and more natural appearing hairline, and performing a series of scalp reduction procedures before placing grafts into the recipient area.

Scalp reductions lifted the permanent hair growing fringe up toward the top, reducing the size of the bald spot, both at the time of surgery and for the future. When full-size grafts were the only technique, scalp reductions were often the difference between an individual not being a candidate for transplants, and becoming a candidate.

SCALP REDUCTIONS

Scalp reductions had been performed since the 1920s for tumor and scar removal, and from the 1960s through the 1970s, as a way to reduce the amount of bald area needing full-size hair transplant grafts.



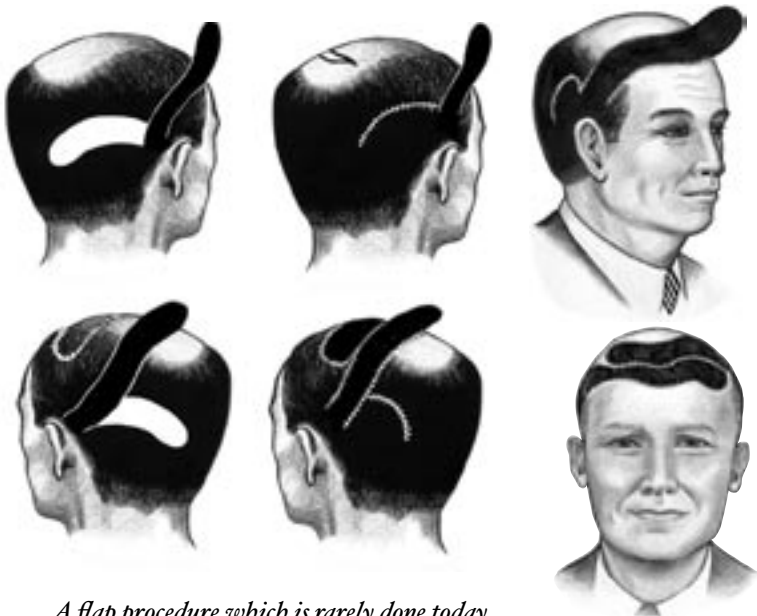
Scalp reduction: before and after.

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A scalp reduction allowed the surgeon to place more of the limited supply of donor follicles at the hairline, rather than spreading them over a larger bald area on top. Reductions were also used on occasion in the 1970s to remove chronically inflamed portions of the scalp on people who had tried synthetic fiber artificial hair implants.

While no longer commonly performed for baldness reduction, the procedure is still occasionally done to removed tissue damaged by injury, for skin tumor removal, or for certain cosmetic reasons. Reduction procedures have also been used to repair the appearance of people who have suffered traumatic injury to their scalp from automobile accidents or burns.

Scalp reductions were regularly performed on patients with extensive baldness to improve their condition for hair transplantation. They are rarely performed today. A scalp reduction is the surgical removal of a portion of the bald part of the scalp, performed under local anesthetic. After the portion of bald scalp is removed, the edges of the opening are drawn together so that the adjacent hair-bearing scalp is stretched up or over toward the center of the reduction area. The hair-bearing scalp surrounding the reduction site is stretched slightly as the scalp reduction opening is closed, essentially spread-



A flap procedure which is rarely done today.

ing the active hair follicles over a larger area. The scalp usually has plenty of flexibility and stretch to allow a strip or T-shaped piece of bald skin an inch or so wide, and five inches long, to be removed in one procedure.

To prepare the scalp for hair restoration surgery, more than one scalp reduction procedure could be performed. Scalp reductions could be repeated every three to four months, further reducing the size of the bald spot each time. With each successive procedure, the fine scar remaining from the previous procedure would be removed along with additional bald scalp. This way there would be only a single scar. The fine scar remaining from the last reduction would be covered by hair transplant grafts, which would be placed directly into the scar tissue.

FLAPS AND SCALP LIFTS

In the 1970s and 1980s, another style of surgical hair restoration involved stretching, lifting and moving around large portions of the hairy part of the scalp to give a full head of hair look in a single procedure. These procedures were performed under general anesthetic, which presented an increased medical risk. There was the risk of visible scars from the large sections of scalp that were moved around, and with some procedures the hair growth direction was backwards, and looked unnatural. There was also increased risk of large patches of tissue death if complications developed, which presented a significant problem in contrast to one or two full size hair transplant grafts failing.

All of these procedures are now only rarely performed, and have been largely replaced by various Follicular Unit Grafting techniques.