The Moriarty sign: an appraisal

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SUMMARY. If the recipient site of a split skin graft becomes more painful than the donor site, it is a sign that the graft is unlikely to take 100% and suggests that early inspection of the site should be undertaken. If, however, the donor site is consistently the more painful, good take is likely. This has been termed “Moriarty’s sign”. A prospective study of 40 patients is presented and suggests that this sign is a reliable indicator of graft take. The derivation of the term and its importance in clinical practice are discussed.

"You have never heard of Moriarty?" said Holmes.
"Never."
"Ay, there's the genius and wonder of the thing!" he cried. "The man pervades London and no-one has ever heard of him."

Conan Doyle, 1897.

Like Sherlock Holmes's arch adversary, the sign that bears the same name is often right under our noses, yet no-one has ever heard of it. However, the Moriarty who is eponymously remembered in this way has nothing to do with Victorian London, nor indeed directly with plastic surgery.

The fact that a successful split skin grafting procedure was associated with more pain in donor than recipient sites has been tacitly recognised from the early days of skin transfer (Converse and Robb-Smith, 1944), but it was left to Stark to delineate in his text of 1962: "If there is no discharge from the graft or pain in the immediate area, the dressing on a graft is left undisturbed for at least a week (Moriarty's sign). If the reverse is true the dressing should be removed earlier" (Stark, 1962).

Dr Stark felt that this sign was important enough to merit an eponym but was sufficiently modest to avoid attaching his own name to it. He therefore looked elsewhere and eventually found his inspiration, like many before him, in his local bar. The ever-congenial host was an Irishman named P. J. Moriarty (Stark, 1987, personal communication) (Fig. 1).

The term has recently been resurrected (Freshwater, 1983) and serves to highlight an important physical sign in plastic and reconstructive surgery. To test its validity we set up a small prospective study of 40 consecutive patients.

Materials and method

Forty consecutive patients were studied. They formed a mixed group of age, sex, race, diagnosis and site of lesion, who underwent split thickness skin grafting using a graft knife under general anaesthesia. All grafts were fenestrated and both donor and recipient sites were dressed conventionally. The recipient site was left undisturbed for 5 days unless problems were suspected, and daily enquiries made as to whether donor site (Moriarty-positive) or recipient site...
(Moriarty-negative) was more painful or, if the sign was equivocal, this too was noted. When the recipient site was finally examined, the percentage take was recorded.

Results

Thirty-two patients were consistently (on at least 4 out of 5 days questioned) Moriarty-positive. All grafts took well, none less than 75% (Fig. 2). Five patients were consistently Moriarty-negative and only two of these had taken more than 75%; four were less than 50% and one had 50–75%. Three patients had equivocal results and one of these took less than 75% (Table 1). This is a significant result ($p < 0.00001$ using Fisher’s exact test). Reasons for failure to take 100% were poor immobilisation, infection with positive culture, haematoma (two cases) and one failed for unknown reasons.

Discussion

This small study confirms the validity of Moriarty’s sign. The population includes grafts taken from thigh, arm and abdomen (Table 2) and seems to apply equally to all these sites. However, experience has shown that it does not apply to scalp grafts or full thickness grafts taken from any site (Freshwater, 1987, personal communication). The test applied in our sample equally to thin or medium-thickness split skin grafts and to grafts fixed with glue or sutures.

Converse has said, “Expect every graft to take 100% and then seek valid reasons, not excuses, for grafts that do not succeed” (Converse, 1964). The Moriarty sign allows us to identify this latter group at an early stage, so facilitating the search for a cause.

This study demonstrates that the Moriarty sign is an excellent predictor of graft take. There were relatively few patients in the “failure” category and a larger study would be helpful to confirm these findings. In the meantime, we believe it is worth drawing attention to this simple and universally available test which can be recognised by even the most junior members of surgical and nursing staff.

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References


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