Interesting image

Radioguided cervical lymphadenectomy in one case of recurrence of differentiated thyroid microcarcinoma

Linfadenectomía cervical radioguiada en un caso de recurrencia de microcarcinoma diferenciado de tiroides

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A 42-year-old woman with papillary thyroid microcarcinoma in 2003 debuted with right cervical lymph node metastasis. After total thyroidectomy and lymphadenectomy (T1N1 Mx), radioiodine therapy with 4.440 MBq (120 mCi) was administered. After treatment, both immediate and 1-year whole-body scans were negative, despite having positive stimulated serum thyroglobulin (Tg) levels (5 ng/dl).

In 2010, cervical ultrasound showed right laterocervical adenopathies (Fig. 1) of between 7 and 13 mm. A PAAF was performed and Tg was determined in the aspirate. Results were positive for metastasis of papillary thyroid carcinoma (Tg of the aspirate: 15 ng/ml). A PET-CT scan for presurgical evaluation of distant metastatic disease was negative.

Considering the small size of the adenopathies confirmed as metastatic and the presence of post-surgical changes, radioguided lymph node dissection was performed to guarantee resection of these adenopathies.

On the day of the surgery 37 MBq (0.25 ml) and 18.5 MBq (0.05 ml) of albumin $^{99m}$Tc-nanocolloid was injected under radioguidance in the known adenopathies, obtaining planar images 30 minutes later (Fig. 2). Thereafter the adenopathies were localized with a gamma probe marking the points of greatest activity on the skin. Once in the operating room the localization of the adenopathies was confirmed with a portable gammacamera. During the surgery we used the gamma probe to locate the marked adenopathies which were found in a deeper than expected lymph node territory which would not have been removed in non radioguided surgery. Likewise, another three adenopathies macroscopically suspected of malignancy were found. Lastly, the portable gammacamera determined whether other deposits of the radiotracer remained in the surgical bed (Fig. 3).

Histological study confirmed the presence of metastasis in the two adenopathies resected by radioguided surgery as well as in one of those removed afterwards. Two months after surgery negative stimulated Tg serum values were obtained (< 0.05 ng/dl).

Although the series are short, increasingly more articles are published demonstrating the utility of this type of radioguided surgery in lymph node recurrence of thyroid cancer. Some authors perform this procedure using the dose of $^{131}$I administered therapeutically or for diagnosis or $^{18}$F-FDG is used with the argument that these radiotracers are more specific to detect tumor cells. Nonetheless, in our case both the tracing with radioiodine as well as PET-CT were negative, thereby ruling out surgery radioguided with these radiotracers. Thus, in our case, the technique performed was decisive to guarantee the resection of the single focus of metastatic disease.
Figure 2. Planar scintigraphy (anterior and right lateral), 30 minutes after ultrasound-guided injection of albumin $^{99m}$Tc-nanocolloid. Two deposits are observed in the right cervical region corresponding to the adenopathies in which the radionuclide was injected.

Figure 3. Intraoperative images with portable gammacamera, 60 minutes after the injection of albumin $^{99m}$Tc-nanocolloid in the adenopathies. A) surgical field prior to lymph node resection. B) surgical field after lymph node resection.

References

