**Patients and Methods**

*Design*

(1) Presentation of 2 cases of paradoxical hidradenitis suppurativa (HS) in patients receiving TNF-α inhibitors and (2) systematic review and case meta-analysis of the scientific literature of case reports and epidemiological studies regarding paradoxical HS with TNF-α inhibitors.

*Case Series*

Patients

The patients included in the case series study are all consecutive patients with paradoxical HS referred to the HS clinic of Hospital Universitario Virgen de las Nieves.

 Inclusion Criteria

Definition of paradoxical HS: patients treated with TNF-α inhibitors, adalimumab, infliximab, etanercept, golimumab, or certolizumab-pegol who developed HS after starting the biological treatment.

 Exclusion Criteria

Patients who developed paradoxical HS under any biologic drug other than TNF inhibitors.

Variables of Interest

Clinical and epidemiological features of HS were gathered through clinical interview and physical examination.

*Systematic Review*

Search Criteria

(1) Articles published in scientific journals included in MEDLINE or EMBASE databases and (2) articles written in English, Spanish, French, or German. All types of epidemiological studies regarding paradoxical HS were included; narrative reviews were excluded. The bibliographic search was performed on January 7, 2020,using PubMed and EMBASE databases.

Search Algorithm

(PARADOXICAL OR DRUG INDUCED) AND (HIDRADENITIS SUPPURATIVA OR ACNE INVERSA) AND (ADALIMUMAB OR INFLIXIMAB OR ETANERCEPT OR GOLIMUMAB OR CERTOLIZUMAB-PEGOL OR BIOLOGIC AGENTS).

 Data Analysis

Two independent reviewers examined the title and abstract of the articles obtained in the first search to recognize relevant studies. Full texts of all studies meeting the inclusion criteria were reviewed, and their bibliographic references were checked for additional sources. The articles upon whose relevance both reviewers agreed were included in the analysis. In the case of disagreement, a third reviewer analysed the article.

 Statistical Analysis

Descriptive statistics were used to present characteristics of the sample. The Kolmogorov-Smirnov test was used to check the normality of the variables. Continuous data (delay from TNF-α inhibitor exposure) are expressed as the median and range. The absolute and relative frequency distributions were estimated for qualitative variables. χ2 tests or Fisher’s exact test when needed were used to compare therapeutic strategies (maintain biologic/switch or stop) and (stop/switch) regarding paradoxical HS. Significance was set for all tests at 2-tailed *p* < 0.05. Statistical analyses were performed using JMP version 9.0.1 (SAS Institute, Cary, NC, USA).